PHILIPS

55PP9501/05

MODEL

SERVICE MANUAL

Colour Television **Chassis**

MG5.1E

AA

Service
Service
Service

Service Manual

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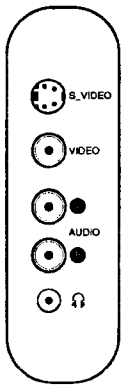
1. Technical specifications

1.1 Specifications

Mains voltage	:	220V - 240V (± 10%); 50-60Hz (± 5%)
Aerial input impedance	:	coaxial 75 Ω
Minimal aerial voltage	:	30µV (VHF), 40µV (UHF)
Maximum aerial voltage	:	180 mV
Programmes	:	0-99
VCR programmes	:	0, 90-99

1.2 Specification of the terminal sockets

1.2.1 Front connections



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131099

Figure 1-1

Audio/Video

- Video	1Vpp/75Ω	
- Audio	L(0.5Vrms ≥10kΩ)	
- Audio	R(0.5Vrms ≥10kΩ)	
- Headphone	(32-600Ω ≥10mΩ)	

SVHS

1 -		
2 -		
3 - Y	(1Vpp; 75Ω)	
4 - C	(0.3 Vpp;75Ω)	

1.2.2 Rear connections

See figure 1.2

External 1(in/out): RGB+CVBS

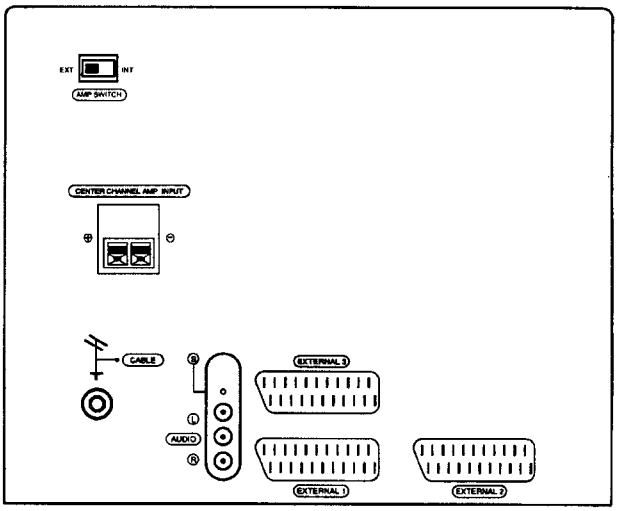

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Figure 1-2

1 - Audio	R (0.5Vrms ≤1kΩ)	
2 - Audio	R (0.5Vrms ≥10kΩ)	
3 - Audio	L (0.5Vrms ≤1kΩ)	
4 - Audio		
5 - Blue		
6 - Audio	L (0.5Vrms ≥10kΩ)	
7 - Blue	(0.7Vpp/75Ω)	
8 - CVBS-status	0-1.3V:INT 4.5-7V:EXT 16:9 9.5-12V:EXT 4:3	
9 - Green		
10-		
11- Green	(0.7Vpp/75Ω)	
12-		
13- Red		
14- RGB-status		
15- Red	(0.7Vpp/75Ω)	
16- RGB-status	0-0.4V:INT 1-3V:EXT/75Ω	
17- CVBS		
18- CVBS		
19- CVBS	(1Vpp/75Ω)	
20- CVBS	(1Vpp/75Ω)	
21- Earth socket		

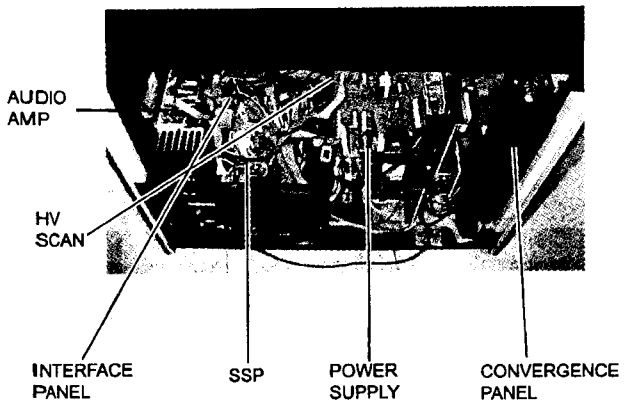
External 2 (in/out): SVHS+RGB+CVBS (intended for VCR.)

1 - Audio	R (0.5Vrms ≤1kΩ)	
2 - Audio	R (0.5Vrms ≥10kΩ)	
3 - Audio	L (0.5Vrms ≤1kΩ)	
4 - Audio		
5 - Blue		
6 - Audio	L (0.5Vrms ≥10kΩ)	
7 - Blue / Chroma out	(0.7Vpp/75Ω)	
8 - CVBS-status	0-1.3V:INT 4.5-7V:EXT 16:9 9.5-12V:EXT 4:3	
9 - Green		
10-	Easy link	
11- Green	(0.7Vpp/75Ω)	
12-		
13- Red		
14- RGB-status		

15- Red / chroma-in (0.7Vpp/75Ω)
16- RGB-status (0-0.4V:INT 1-3V:EXT/75Ω)
17- CVBS
18- CVBS
19- Y/CVBS (1Vpp/75Ω)
20- Y/CVBS (1Vpp/75Ω)
21- Earth socket

External 3 (in): CVBS+Audio (optional)

1 -
2 - Audio R (0.5Vrms >10kΩ)
3 -
4 - Audio
5 -
6 - Audio L (0.5Vrms>10kΩ)
7 -
8 - CVBS-status 0-1.3V:INT 4.5-7V:EXT 16:9 9.5-12V:EXT 4:3
9 -
10-
11-
12-
13-
14-
15-
16-
17- CVBS
18- CVBS
19-
20- CVBS (1Vpp/75Ω)
21- Earth socket



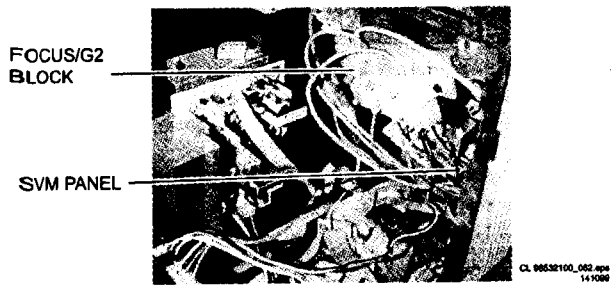


Figure 1-3

2. Safety instructions, Maintenance instruction, Warnings and Notes

2.1 Safety instructions for repairs ⚠

1. Safety regulations require that during a repair:
   - The set should be connected to the mains via an isolating transformer;
   - Safety components, indicated by the symbol ⚠, should be replaced by components identical to the original ones;
   - When replacing the CRT, safety goggles must be worn.
2. Safety regulations require that after a repair the set must be returned in its original condition. In particular attention should be paid to the following points.
   - As a strict precaution, we advise you to resolder the solder joints through which the horizontal deflection current is flowing, in particular ('general repair instruction'):
     - All pins of the line output transformer (LOT);
     - Fly-back capacitor(s);
     - S-correction capacitor(s);
     - Line output transistor;
     - Pins of the connector with wires to the deflection coil;
     - Other components through which the deflection current flows.
     - Note:
     - This resoldering is advised to prevent bad connections due to metal fatigue in solder joints and is therefore only necessary for television sets older than 2 years.
   - The wire trees and EHT cable should be routed correctly and fixed with the mounted cable clamps.
   - The insulation of the mains lead should be checked for external damage.
   - The mains lead strain relief should be checked for its function in order to avoid touching the CRT, hot components or heat sinks.
   - The electrical DC resistance between the mains plug and the secondary side should be checked (only for sets which have a mains isolated power supply). This check can be done as follows:
     - Unplug the mains cord and connect a wire between the two pins of the mains plug;
     - Set the mains switch to the "on" position (keep the mains cord unplugged!);
     - Measure the resistance value between the pins of the mains plug and the metal shielding of the tuner or the aerial connection on the set. The reading should be between 4.5 MΩ and 12 MΩ
     - Switch off the TV and remove the wire between the two pins of the mains plug.
   - The cabinet should be checked for defects to avoid touching of any inner parts by the customer.

2.2 Maintenance instruction

It is recommended to have a maintenance inspection carried out by a qualified service employee. The interval depends on the usage conditions:

- When the set is used under normal circumstances, for example in a living room, the recommended interval is 3 to 5 years.
- When the set is used in circumstances with higher dust, grease or moisture levels, for example in a kitchen, the recommended interval is 1 year.
- The maintenance inspection contains the following actions:
  - Execute the above mentioned 'general repair instruction'.
  - Clean the power supply and deflection circuitry on the chassis.
  - Clean the picture tube panel and the neck of the picture tube.

2.3 Warnings

1. ESD
2. All ICs and many other semiconductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically. When repairing, make sure that you are connected with the same potential as the mass of the set by a wristband with resistance. Keep components and tools also at this same potential.
3. Available ESD protection equipment:
   - Complete kit ESD3 (small table mat, Wristband, Connection box, Extension cable and Earth cable) 4822 310 10671
   - Wristband tester 4822 344 13999
4. In order to prevent damage to ICs and transistors, all high-voltage flashovers must be avoided. In order to prevent damage to the picture tube, the method shown in Fig. 2-4 should be used to discharge the picture tube. Use a high-voltage probe and a multimeter (position DC-V). Discharge until the meter reading is 0V (after approx. 30s).
5. Together with the deflection unit and any multipole unit, the flat square picture tubes used form an integrated unit. The deflection and the multipole units are set optimally at the factory. Adjustment of this unit during repair is therefore not recommended.
6. Be careful during measurements in the high-voltage section and on the picture tube.
7. Never replace modules or other components while the unit is switched on.
8. When making settings, use plastic rather than metal tools. This will prevent any short circuits and the danger of a circuit becoming unstable.
9. Wear safety goggles during replacement of the picture tube.

2.4 Notes

The direct voltages and oscillograms should be measured with regard to the tuner earth (⊥), or hot earth (⊥ϟ) as this is called. The direct voltages and oscillograms shown in the diagrams are indicative and should be measured in the Service Default Mode (see chapter 5) with a colour bar signal and stereo sound (L:3 kHz, R:1 kHz unless stated otherwise) and picture carrier at 475.25 MHz.
Where necessary, the oscillograms and direct voltages are measured with (⊓) and without aerial signal (⊼). Voltages in the power supply section are measured both for normal operation (Φ) and in standby (⏻). These values are indicated by means of the appropriate symbols.
The picture tube PWB has printed spark gaps. Each spark gap is connected between an electrode of the picture tube and the Aquadag coating.
The semiconductors indicated in the circuit diagram and in the parts lists are completely interchangeable per position with the semiconductors in the unit, irrespective of the type indication on these semiconductors.

4. Disassembly procedure

4.1 To remove the rear cover

1. Remove the 10 screws located on the sides and bottom of the lower center rear cover (1).
2. Remove the 3 screws on the bottom of the plastic upper rear cover (2). Remove the lower center rear cover (1).

Note: If you are only servicing a PWB or loudspeaker, you do not have to remove the plastic upper rear cover.

1. Remove the remaining 11 screws located in the upper rear cover (2). Lift cover up to dislodge from pegs and remove the cover.
2. Remove the 6 screws located in the mirror mounting board (18) and remove the board.

Note: care should be taken NOT to place fingerprints or smudges on the mirror.

1. Remove the 2 screws located in the plastic light barrier (16) and remove the barrier.
2. Remove the 12 screws located in the end rear covers (3(, 6 per cover, and remove each cover.

4.2 To remove the optical assembly or individual light box assemblies

1. Separate CRT boards from assemblies to be removed.
2. To remove the optical assembly, loosen the 4 screws located in the assembly and lift assembly up and out.
3. To remove individual assemblies, loosen the 4 screws located in the assembly you wish to remove and lift the assembly up and out.

4.3 To remove the digital convergence panel

1. Remove the 2 screws located in the digital convergence panel frame. Lift the frame and panel to remove.

4.4 To remove the 25W amplifier panel

1. Remove the 2 screws located at the top of the 25W amplifier panel frame. Lift the frame and panel to remove.

4.5 To remove the rear switch panel

1. Remove the 2 screws located on the bottom of the rear switch panel. Press 2 tabs on the right side, slide back and remove the panel.

4.6 To remove the power supply

1. Remove the 3 screws located in the power supply panel. Press 3 tabs on the left side and remove the panel.

4.7 To remove the interface panel

1. Pull 2 tabs in the front of the interface panel. Lift the panel and slide forward to remove.

4.8 To remove the side jack panel

1. Remove 2 screws from the side jack panel frame. Slide the panel out to remove.

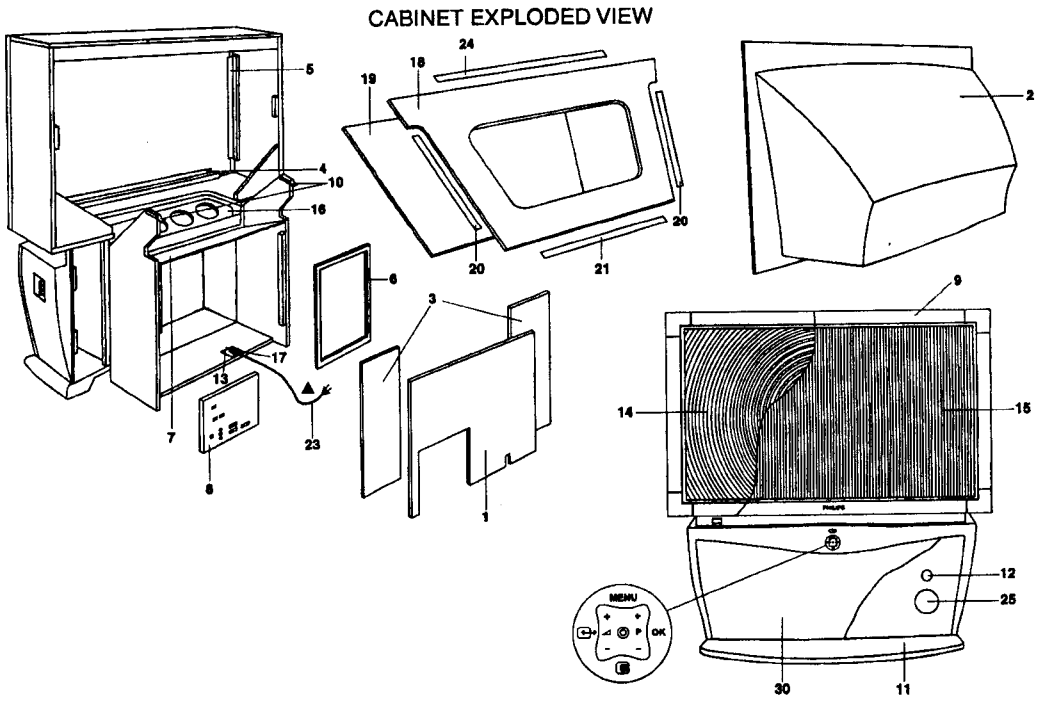


Figure 4-1

5. Service modes, error codes and protections

In this chapter the following paragraphs are included:
5.1Test points
5.2Service modes and Dealer Service Tool and ComPair (including fault finding tips related to CSM-mode)
5.3Error codes
5.4Fault find tree

5.1 Test points

The MG5.1E chassis is equipped with test points in the service printing. These test points are referring to the functional blocks:

- P1-P2-P3, etc.: Test points for the power supply.
- L1-L2-L3, etc.: Test points for the line drive and line output circuitry.
- F1K-F2K-F3K, etc on Small Signal Panel: Test points for the frame drive.
- F1F-F2F-F3F, etc. on CRT/Scavem Panel: Test points for the CRT-panel circuitry.
- F1-F2-F3, etc. on Large Small Signal Panel: Test points for the frame output circuitry.
- S1-S2-S3, etc: Test points for the synchronisation circuitry.
- V1-V2-V3, etc: Test points for the video processing circuitry.
- I1-I2-I3, etc: Test points for the Tuner/IF part.
- A1-A2-A3, etc. on Small Signal Panel: Test points for the audio processing circuitry.
- A1-A2-A3, etc. on Large Signal Panel: Test points for the audio amplifiers.
- C1-C2-C3, etc: Test points for the control circuitry.
- T1-T2-T3, etc: Testpoints for the teletext circuitry.
- SC1-SC2-SC3, etc: Test points for the Scavem circuitry.

The numbering is done in a for diagnostics logical sequence; always start diagnosing within a functional block in the sequence of the relevant test points for that functional block.

5.2 Service modes, Dealer Service Tool and ComPair

For easy installation and diagnosis the dealer remote control RC7150 is introduced. The RC7150 can be used for all new TV sets, including all set of the MG5.1E chassis. The RC7150 is also called Dealer Service Tool or DST. The ordering number of the DST (RC7150) is 4822 218 21232.

5.2.1 Installation features for the dealer

The dealer can use the RC7150 for programming the TV-set with presets. 10 Different program tables can be programmed into the DST via a TV-set (downloading from the GFL, MD2 or MG2.1 to the DST; see GFL, MD2 and MG2.1 service manuals) or by the DST-I (DST interface; ordering code 4822 218 21277).
For explanation of the installation features of the DST, the directions for use of the DST (4822 727 20073) are recommended (for the MG5.1E chassis, download code 4 should be used).

5.2.2 Diagnose features for the servicer

The MG5.1E sets can be put in the two service modes via the DST RC7150. These are the Service Default Mode (SDM) and the Service Alignment Mode (SAM). The SDM and SAM can also be entered by short circuiting the relevant pins on the SSP.

Service Default Mode (SDM)
Specification of the SDM:
- Tuning frequency 475.25 MHz.
- TV-system for BGLM sets set to BG, for BGLL'I sets to LL'.
- All picture settings at 50% (brightness, colour, contrast, HUE).
- All sound settings at 50% except volume at 25% (so bass, treble, balance at 50%, volume at 25%).
- All service-unfriendly modes are disabled (like sleep timer, child lock, blue mute).

Entering the SDM can be done in 2 ways:
- By the "DEFAULT" key on the DST while the set is in the normal operation mode.
- By short-circuiting for a moment the two pins (pin 2 and 3 of connector 0356) on the component side of the SSP with the indication "SDM" (activation can be performed in all modes except when the set has a problem with the main-processor).

Note: If the SDM is entered via the pins, all the protections are de-activated.
Exiting the SDM can only be done via the STANDBY command. By switching off-on the set with the mains switch the MG5.1E will come up again in the SDM.

Service Alignment Mode (SAM)
Specification of the SAM:
- Software alignments (see chapter 8).
- Option settings (see chapter 8).
- Error buffer reading and erasing. The most recent error code is displayed on the left side.
- Operation counter.
- Software version.

Entering the SAM can be done in 2 ways:
- By the button on the DST while the set is in the normal operation mode (or SDM). Enter the password '3-1-4-0' and press OK.
- By short-circuiting for a moment the two pins (pin 1 and 2 of connector 0356) on the component side of the SSP with the indication "SAM" (activation can be performed in all modes except when the set has a problem with the microprocessor).

Note: If the SAM is entered via the pins, all protections are de-activated.
Exiting the SAM can be done via the MENU command or via switching off-on the set with the mains switch.

Customer Service Mode (CSM)
All MG5.1E sets are equipped with the 'Customer Service Mode' (CSM). This 'Customer Service Mode' is a special service mode which can be activated and deactivated by the customer upon request of the service technician/dealer during a telephone conversation in order to identify the status of the set. This CSM is a 'read only' mode, therefore modifications in this mode are not possible.

Switching-on of the Customer Service Mode
The Customer Service Mode will switch-on after pressing simultaneously the "MUTE" knob on the remote control handset and the "MENU" button on the TV for at least 4 seconds. This activation only works if there is no menu on the screen.

Switching-off the Customer Service Mode
The Customer Service Mode will switch-off after pressing any key of the remote control handset (with exception of the "cursor-up" and "cursor-down" keys), or the buttons on the TV or by switching off the TV set with the mains switch.

Detailed explanation of the Customer service Mode
After switching on the Customer Service Menu the following screen will appear:

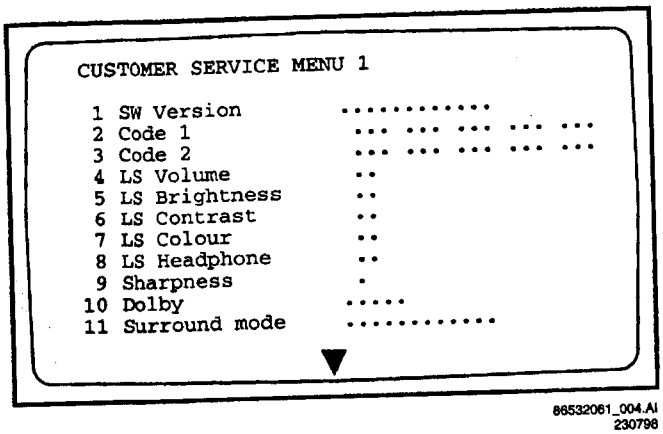


Figure 5-1 Customer Service Menu 1

Line 1: Software version; the build in software version (AAAABCX.Y)
- AAAA= MG21(chassis name)
- B = E (Europe)
- C = 1 (language cluster)
- X = main version number
- Y = sub version number

Details on the software version can be found in the chapter "Software Survey" of the publication "Product Survey - Colour Television".

Line 2: Code 1; gives the last 5 errors of the error buffer. As soon as the built-in diagnose software has detected an error the buffer is adapted.

Line 3: Code 2; gives the first 5 errors of the error buffer. As soon as the built-in diagnose software has detected an error the buffer is adapted.
The last occurred error is displayed on the leftmost position of code 2. Each error code is displayed as a 3 digit number. When less than 10 errors occur, the rest of the line(s) is(are) empty. In case of no errors the text "No Errors" is displayed. See paragraph 5.3 of this chapter for a description of the error codes.

Line 4: LS Volume; gives the Last Status of the volume as set by the customer for this selected transmitter.
The value can vary from 0 (volume is minimum) to 24 (volume is maximum). Volume values can be changed via the volume key on the remote control handset.

Line 5: LS Brightness; gives the Last Status of the brightness as set by the customer for this selected transmitter.
The value can vary from 0 (brightness is minimum) to 63 (brightness is maximum). Brightness values can be changed via the "cursor left" and "cursor right" keys on the remote control handset after pressing the red button for picture menu and selecting "brightness".

Line 6: LS Contrast; gives the Last Status of the contrast as set by the customer.
The value can vary from 0 (contrast is minimum) to 63 (contrast is maximum). Contrast values can be changed via "cursor left" and "cursor right" keys on the remote control handset after pressing the red button for picture menu and selecting "contrast".

Line 7: LS Colour; gives the Last Status of the colour saturation, as set by the customer.
The value can vary from 0 (colour is minimum) to 63 (colour is maximum). Colour values can be changed via "cursor left" and "cursor right" keys on the remote control handset after pressing the red button for picture menu and selecting "colour".

Line 8: LS Headphone; gives the Last Status of the headphone volume, as set by the customer.
The value can vary from 0 (volume is minimum) to 24 (volume is maximum). Headphone volume values can be changed via the "cursor left" and "cursor right" keys on the remote control handset after pressing the green button for sound menu and selecting "headphone".

Line 9: Sharpness; gives the sharpness value. The value can vary from 0 (sharpness is minimum) to 7 (sharpness is maximum).
In case of bad antenna signals a too high value of the sharpness can result in a noisy picture. Sharpness values can be changed via the "cursor left" and "cursor right" keys on the remote control handset after pressing the red button for picture menu and selecting "sharpness".

Line 10: Dolby; indicates whether the received transmitter transmits Dolby sound (present) or not (not present).
Attention: The presence of Dolby can only be tested by the software on the Dolby Signalling bit. If a Dolby transmission is therefore received without a Dolby Signalling bit, then this indicator will show "not present" even though such a Dolby transmission is received.

Line 11: Surround Mode; indicates the by the customer selected surround mode.
In case the set is a Non-Dolby set there will be displayed "0". If it is a Dolby-set then is displayed: "Pro Logic", "Dolby 3 Stereo", "Hall" or "Off". For Dolby-set surround mode can be changed via the "cursor left" and "cursor right" keys on the remote control handset after pressing the green button for sound menu and selecting "Surround settings".

By means of the "cursor-down" knob on the remote control handset the Customer Service Menu 2 will appear. By means of the "cursor-up" knob on the remote control handset the Customer Service Menu 1 will appear again.

Customer Service Menu 2 represents following information:

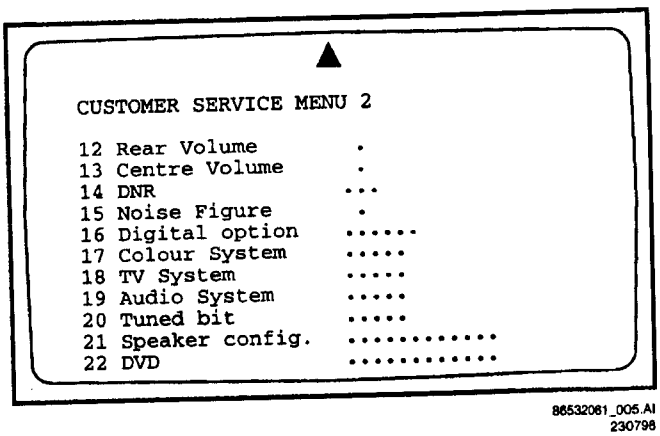


Figure 5-2 Customer Service Menu 2

Line 12: Rear Volume; gives the volume value of the surround sound loudspeakers.
This value can vary from 0 (minimum volume) to 63 (maximum volume). Rear volume can be changed via the "cursor left" and "cursor right" keys on the remote control handset after pressing

the green button for sound menu, selecting "Surround settings" and selecting "Rear volume". This feature is only available when surround mode is in "Dolby Pro Logic" or "Hall".

Line 13: Centre Volume; gives the volume value of the centre loudspeakers. This value can vary from 0 (minimum volume) to 63 (maximum volume). Centre volume can be changed via the "cursor left" and "cursor right" keys on the remote control handset after pressing the green button for sound menu, selecting 'Dolby Pro Logic' and selecting "centre volume". This feature is only available when surround mode is in "Dolby Pro Logic" or "Dolby 3 Stereo".

Line 14: DNR (Dynamic Noise Reduction); gives the setting of the DNR for the selected transmitter. The following selections are possible:
- "off", "min", "med" or "max"
- "off" or "automatic" (MG5.1E with "Automatic Noise Reduction").

The DNR can be changed via the "DNR" key on the remote control handset.

Line 15: Noise Figure; gives the selected noise ratio for this selected transmitter.
This value can vary from 0 (good signal) to 127 (average signal) and to 255 (bad signal). This only works in case the DNR selection is "off/automatic".

Line 16: Digital Option; gives the selected digital mode, "100Hz", Digital Scan" or "Natural Motion". Digital option can be changed via the "cursor left" and "cursor right" keys on the remote control handset after pressing the red button for picture menu and selecting "digital options".

Line 17: Colour System; gives information about the colour system of the selected transmitter.
- Black and white: No colour carrier received
- PAL: PAL signal received
- SECAM: SECAM signal received
- NTSC: NTSC signal received

Line 18: TV System; gives information about the video system of the selected transmitter.
- BG: BG signal received
- DK: DK signal received
- I: PAL I signal received
- L: SECAM L signals received
- M38.9: NTSC M signal received with video carrier on 38.9 MHz
- MN: NTSC M signal received

Line 19: Audio System; gives information about the audio system of the selected transmitter.
- Sound Muted: No sound
- Dolby Pro Logic: Dolby Pro Logic sound received
- Mono: Mono sound received
- Stereo: Stereo sound received
- Dual I: Language I received
- Dual II: Language II received
- Digital Mono: Digital mono sound is received
- Digital Stereo: Digital stereo sound is received
- Digital Dual I: Digital language I is received
- Digital Dual II: Digital language II is received

Line20: Tuned Bit; gives information about the tuning method of the stored preset.
If the value is "Yes" the preset is stored via manual entry of the frequency when a transmitter was not present on that frequency. In that case the TV will attempt to perform a micro-search every time the preset number is selected. Once the micro-search has been successful the Tuned Bit will be set to "No".

Line 21: Speaker configuration; gives the configuration setting for the speakers.
In case the set is a Non-Dolby set there will be displayed "0". If it is a Dolby-set then is displayed: "Full internal", "L/R external", "Surround external" or "Full external". For the Dolby-set the speaker configuration can be changed via the "cursor left" and "cursor right" keys on the remote control handset after opening the installation menu and selecting "set-up". The installation menu can be opened by pressing "timer" and "enlarge" at the same time. This feature is only available when the set has virtual Dolby.

Line 22: DVD; gives the configuration setting for DVD. This can be "Present" or "Not Present".
If "Present" is selected the starting point is a top quality signal and a number of settings are therefore changed automatically. DVD can be changed via the "cursor left" and "cursor right" keys on the remote control handset after opening the installation menu and selecting "set-up". The installation menu can be opened by pressing "timer" and "enlarge" at the same time.

Problems and solving tips
The procedures to change the value or the status of the different settings is described in the paragraph 'Detailed explanation of the Customer Service Mode'.

Picture problems
Worse picture quality in case of DVD pictures Check line 22 "DVD". In case line 22 gives the indication "Not Present" change the setting into "Present".

Snowy/noisy picture
1. Check line 15 "Noise Figure". In case the value is 127 or higher and the value is also high on other programs check the aerial cable/aerial system.
2. Check lines 9 "Sharpness", 14 "DNR" and 15 "Noise Figure". In case the value of line 9 is 3 or 4 and the value of line 15 is high (127 or higher), lower the value of line 9 "sharpness" and switch DNR (line 14) to "automatic", "on" or to a higher value.

Picture too dark
1. Press "Smart Picture" button on the Remote Control handset. In case picture improves, raise the brightness value or raise the contrast value. The new value(s) are automatically stored for all TV channels.
2. After switching on the Customer Service Mode the picture is OK. Raise the brightness value or raise the contrast value. The new value(s) are automatically stored for all TV channels.
3. Check lines 6 "LS Brightness" and 7 "LS Contrast". The value of line 6 is low (<10) or the value of line 7 is low ((10). Raise the brightness value or raise the contrast value.

Picture too bright
1. Press "Smart Picture" button on the Remote Control handset. In case picture improves, reduce the brightness value or reduce the contrast value. The new value(s) are automatically stored for all TV channels.
2. After switching on the Customer Service Mode the picture is OK. Reduce the brightness value or reduce the contrast value. The new value(s) are automatically stored for all TV channels.
3. Check lines 6 "LS Brightness" and 7 "LS Contrast". The value of line 6 is high (>40) or the value of line 7 is high ((50). Reduce the brightness value or raise the contrast value.

Fading picture
Digital scan effect. Check line 14 "DNR". The status of "DNR" is 'med' or 'max'. Reduce "DNR" to 'min' or switch off the digital scan.

White line around picture elements and text
1. Press "Smart Picture" button on the Remote Control handset. In case picture improves, reduce the sharpness value. The new value(s) are automatically stored for all TV channels.
2. After switching on the Customer Service Mode the picture is OK. Reduce the sharpness value. The new value(s) are automatically stored for all TV channels.
3. Check line 8 "Sharpness". Reduce the sharpness value. The new value(s) are automatically stored for all TV channels

No picture.
Check line 20 "Tuned bit". In case the value is 'Yes', install the required program again. Open the installation menu by pressing "timer" and "enlarge" at the same time and perform manual installation.

Blue picture. No proper signal is received.
Check the aerial cable/aerial system.

Blue picture and/or unstable picture.
A scrambled or decoded signal is received.

Black and white picture.
Check line 5 "LS colour". In case the value is low ((10) raise the value of colour. The new value(s) are automatically stored for all TV channels.

No colours/colour lines around picture elements.
1. Check lines 17 "Colour System" and 18 "TV System". In case line 17 is 'PAL' and line 18 is 'M 38,9', the installed system for this preset is 'USA', while 'West Europe' is required. Install the required program again. Open the installation menu by pressing "timer" and "enlarge" at the same time and perform manual installation. Select 'System; West Europe'.
2. In case line 17 is 'PAL' and line 18 is 'L', the installed system for this preset is 'France', while 'West Europe' is required. Install the required program again. Open the installation menu by pressing "timer" and "enlarge" at the same time and perform manual installation. Select 'System; West Europe'.

No colours/noise in picture
1. Check lines 17 "Colour System" and 18 "TV System". In case line 17 is 'Black and White' and line 18 is 'BG', the installed system for this preset is 'West Europe', while 'USA' is required. Install the required program again. Open the installation menu by pressing "timer" and "enlarge" at the same time and perform manual installation. Select 'System; USA'.
2. In case line 17 is 'Black and White' and line 18 is 'L', the installed system for this preset is 'France', while 'USA' is required. Install the required program again. Open the installation menu by pressing "timer" and "enlarge" at the same time and perform manual installation. Select 'System; USA'

Colours not correct.
Check lines 17 "Colour System" and 18 "TV System". In case line 17 is 'PAL' and line 18 is 'L', the installed system for this preset is 'France', while 'West Europe' is required. Install the required program again. Open the installation menu by pressing "timer" and "enlarge" at the same time and perform manual installation. Select 'System; West Europe'.

Colours not correct/unstable picture.
Check lines 17 "Colour System" and 18 "TV System". In case line 17 is 'SECAM' and line 18 is 'BG', the installed system for this preset is 'USA', while 'France' is required. Install the required program again. Open the installation menu by pressing "timer" and "enlarge" at the same time and perform manual installation. Select 'System; France'.

Unstable picture.
Check lines 17 "Colour System" and 18 "TV System". In case line 17 is 'SECAM' and line 18 is 'M 38,9', the installed system for this preset is 'West Europe', while 'France' is required. Install the required program again. Open the installation menu by pressing "timer" and "enlarge" at the same time and perform manual installation. Select 'System; France'.

Menu text not sharp enough.
1. Press "Smart Picture" button on the Remote Control handset. In case picture improves, reduce the contrast value. The new value(s) are automatically stored for all TV channels.
2. After switching on the Customer Service Mode the picture is OK. Reduce the contrast value. The new value(s) are automatically stored for all TV channels.
3. Check line 7 "LS Contrast". The value of line 7 is high (>50). Reduce the contrast value.

Sound problems

No sound from left and right speaker.
1. Press "Smart Sound" button on the Remote Control handset. In case sound improves, raise the volume value. The new value(s) are automatically stored for all TV channels.
2. After switching on the Customer Service Mode the volume is OK. Raise the volume value. The new value(s) are automatically stored for all TV channels.
3. Check line 4 "LS Volume". The value is low. Raise the value of "Volume". The new value(s) are automatically stored for all TV channels.

Sound too loud for left and right speaker.
1. Press "Smart Sound" button on the Remote Control handset. In case sound improves, reduce the volume value. The new value(s) are automatically stored for all TV channels.
2. After switching on the Customer Service Mode the volume is OK. Reduce the volume value. The new value(s) are automatically stored for all TV channels.
3. Check line 4 "LS Volume". The value is high. Reduce the value of "LS Volume". The new value(s) are automatically stored for all TV channels.

No sound from "centre" speaker.
Check line 12 "Centre Volume". The value is low. Raise the value of the "Centre Volume"

Sound too loud from "centre" speaker.
Check line 12 "Centre Volume". The value is high. Reduce the value of the "Centre Volume"

Diagnose Mode (only active during transmission of error codes and diagnose 99)
This mode is activated by the DIAGNOSE command on the DST for reading the error codes and erasing the error buffer by the DST even when the set is in protection and so there is no picture (assuming that the power supply and the control part are working). For activation see paragraph 5.3. The diagnose Mode is only a temporarily mode (the set will go back to the previous mode), and can not be switched on permanently.
Note: The diagnose mode can not be entered if the SAM is activated.

ComPair

ComPair (Computer Aided Repair) is a service tool for Philips Consumer Electronics products. ComPair is a further development on the DST service remote control allowing faster and more accurate diagnostics. ComPair has three big advantages:

- ComPair helps you to quickly get an understanding how to repair the MG5.1E in short time by guiding you step by step through the repair procedures.
- ComPair allows very detailed diagnostics (on I2C level) and is therefore capable of accurately indicating problem areas. You do not have to know anything about I2C commands yourself; ComPair takes care of this.
- ComPair speeds up the repair time since it can automatically communicate with the MG5.1E (when the micro processor is working) and all repair information is directly available. When ComPair is installed together with the SearchMan MG5.1E electronic manual, schematics and PCBs are only a mouse-click away.

ComPair consists of a Windows based fault finding program and an interface box between PC and the (defective) product. The ComPair interface box is connected to the PC via a serial or RS232 cable. In case of the MG5.1E chassis, the ComPair interface box and the television communicate with each other via bi-directional infrared signal.

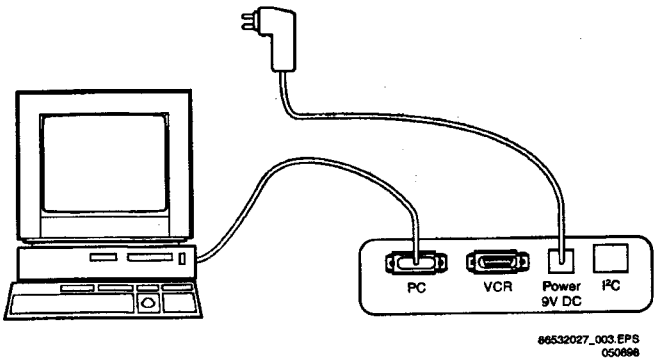


Figure 5-3

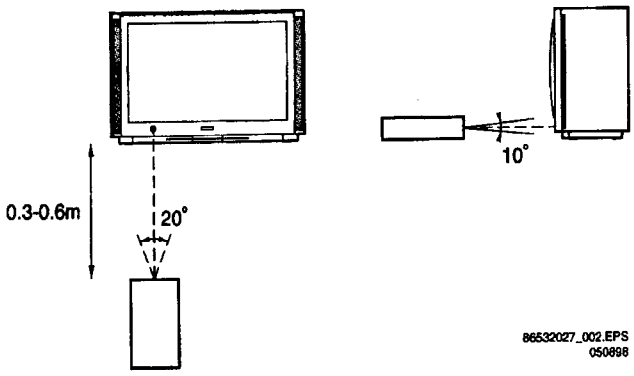


Figure 5-4

The ComPair fault finding program is able to determine the problem of the defective television. ComPair can gather diagnostic information in 2 ways:

1. Communication to the television (automatic)
2. Asking questions to you (manually)

ComPair combines this information with the repair information in its database to find out how to repair the MG5.1E.

Automatic information gathering

Step-by-step start up. Under normal circumstances, a fault in the power supply or an error during start-up will switch the television to protection-mode. ComPair can take over the initialisation of the television. In this way it is possible to distinguish which part of the start-up routine (hence which circuitry) is causing the problem.

Reading out the error buffer, ComPair can automatically read out the contents of the entire error buffer.

Diagnosis on I2C level. ComPair can access the I2C bus of the television without a physical connection. ComPair can send and receive infrared commands to the micro controller of the television. These commands are translated by the controller to I2C commands and vice versa. In this way it is possible for ComPair to communicate (read and write) to devices on the I2C busses of the MG5.1E.

Manual information gathering

Automatic diagnosis is only possible if the micro controller of the television is working correctly and only to a certain extend. When this is not the case, ComPair will guide you through the fault finding tree by asking you questions and showing you examples. You can answer by clicking on a link (e.g. text or an oscillogram) that will bring you to the next step in the faultfinding process.

A question could be: Do you see snow? (Click on the correct answer)

YES / NO

An example can be: Measure testpoint I7 and click on the correct oscillogram you see on the oscilloscope

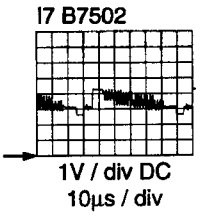


Figure 5-5

By a combination of automatic diagnostics and an interactive question/answer procedure, ComPair will enable you to find most problems in a fast and effective way.

Additional features

Beside fault finding, ComPair provides some additional features like:

- Uploading/downloading of presets
- Managing of preset lists
- Emulation of the Dealer Service Tool

SearchMan (electronic service manual)

When ComPair is installed in combination with SearchMan, all schematics and PCBs will be directly available while you repair a television if you click on a PCB or schematic link.

Example: Measure the DC voltage on C2568 (PCB/schematic) on the small signal level.

Clicking on PCB will automatically pop-up a picture of the PCB with the location of C2568 marked. Clicking on schematic will automatically pop-up the schematic with the location of C2568 marked.

5.3 Error codes

5.3.1 Reading error codes from the error buffer

The error buffer can be read in 2 ways:

1. On the screen via the Service Alignment Mode (SAM). In case picture is OK, the error buffer can be read easiest via

the SAM. In the main menu of the SAM the last 10 different error codes occurred are displayed. The most recent detected error code is displayed on the left side, so e.g.:
0 0 0 0 0 means no error codes present in the buffer
3 0 0 0 0 means one error code present in the buffer; error code 3
2 3 0 0 0 means two error codes present in the buffer; error code 2 is the most recent, error code 3 is detected before 2

2. On the display of the DST. If an error has been detected by the MG5.1E chassis, the set might go into protection. Without the presence of a picture the errors can be read by the DST, as long as the main-processor is still active (green LED continuous and red LED blinking fast (5Hz); in case of red LED is blinking slow (1,25Hz) there is a main-processor problem). To transmit the errors from the TV to the DST:
   1. Press the "DIAGNOSE" key (in all modes except the SAM).
   2. Press "1" to view the last error detected.
   3. Hold the DST 5 to 10 cm in front of the stand-by LED of the set (the IR-sending LED of MG5.1E is located near the stand-by LED).
   4. Press the "OK" key.

The error is represented by a 2 digit number. The 2 digits on the DST are displayed sequentially, with a pause before it is repeated. The digit after the pause is the 1st digit. If the display reads 4 - 7, the error code is 47. To read other error codes, press "DIAGNOSE" and one of the other digit keys. Note:
- If the DST cannot communicate to the MG5.1E in a proper way, ERROR 2 is shown in the display of the DST. Trying again by changing the DST position a little bit might help.
- If the error buffer of MG5.1E is empty, no errors are displayed by the DST; the display remains blank.

5.3.2 Clearing the error buffer

The error buffer can be cleared in 2 ways:
1. In the SAM by selecting the item RESET ERROR BUFFER in the main menu.
2. By the "DIAGNOSE 99" command of the DST (in all modes except the SAM). Press the DIAGNOSE key on the DST, followed by 9 and 9 and then .

Note: When error buffer is full (10 codes), no new error can be stored anymore. However of every error raised is monitored how long it exists in the error buffer. When for any reason a false raised error exists in the buffer, it will be deleted after 50 hours. If this error still is actual after 50 hours, it will be raised again. In this way is safeguarded that history of error codes is stored. Sometimes it is an option to first write down the error buffer content, reset the buffer, and look again which error codes are generated by the set.

5.3.3 Error code table

Error messages (see table)

Error	Device	Description	Defective item	Diagram	Defective module indication
2	ST24E32 or M24C32	Non volatile memory	IC7008	K7	Control
3	SAA5801	OTC2.5 microprocessor/TXT	IC7003	K7	Control
5	UV1316	Tuner	U1102	K1	Tuner
10	TEA6415	I/O source select video	IC7208	K8	Source select
11	TEA6422	I/O source selct audio	IC7777	K8	Source select
15	TDA9320H	HIP I/O-video processing	IC7501	K1	Chroma IF i/O
20	TDA9330H	HOP video control/deflection processor	IC7300	K6	Video Controller
21	TDA9178	LTP Peaking	IC7402	K6	Video Controller
25	MSP3410D	ITT sound processor	IC7751	K3	Audio module
26	SAA7712H	SEDSP dolby processor	IC7770	K4	Audio module
35	UV1316	FDS Tuner	U1102	M1	Video Dual Screen Panel
36	PCF8574	FDS I/O Expander	IC7860	M2	Video Dual Screen Panel
37	SAB9079	FDS Popov	IC7700	M4	Video Dual Screen Panel
38	TDA9320	FDS HIP2	IC7501	M1	Video Dual Screen Panel
39	M24C04	FDS NVM	IC7991	M1	Video Dual Screen Panel
40	83C751	Cordless Transmitter processor	IC7105	R	Surround Transmitter Panel
41	TDA7309	FDS Headphone	IC7620	M5	Video Dual Screen Panel
50	SAA4978H	FBX Picnic	IC7611	L1	Feature Box
53	SAA4992	FBX Falconic	IC7626	L3	Feature Box
54	SAA4997	FBX Veric	IC7621	L2	Feature Box
55	SAA4996	FBX Macpacic	IC7616	L2	Feature Box
56	83C654	MCS processor	IC7803	N3	Digital Audio Module
57	TDA7438	MCS SOFAC L/R	IC7540	N8	Digital Audio Module
58	TDA7438	MCS SOFAC L/R	IC7600	N9	Digital Audio Module
59	TDA7438	MCS SOFAC L/R	IC7570	N10	Digital Audio Module
61	PCF8574	MCS I/O expander	IC7690	N16	Digital Audio Module

Error	Device	Description	Defective Item	Diagram	Defective module indication
65	Slow I2C bus blocked		see fig 5.6	Slow I2C bus blocked	
66	Fast I2C bus blocked		see fig 5.6	Fast I2C bus blocked	
67	Supply 5V	5V2	see fig 5.5	+5 V Supply	
68	Supply 8V	8V6	see fig 5.5	+8V Supply	
70	V fail protection	VFB	fig 5.8	A3/A1/K6	Vertical Flyback
71	H fail protection	HFB	fig 5.8	A1/K6	Horizontal Flyback
73	Line Deflection protection	LDP	IC7484	A1/K6	Line Deflection
74	Beam Current Protection	BC-PROT	TS7351	K6/K7	Beam Current
76	DC Sound protection	DC-PROT	TS7762	A4	Sound Output
77	Feature box protection	FBX-PROT	Fig 5.6	L1	+3V (FBX) Supply
78	Edric protection	EDRIC-PROT	IC7750	K4	+3V (Edric) Supply
79	POPOV protection	POPOV_PROT			
80	Tuner protection	Tuner-PROT	U1102	K1	+8V (Tuner) Supply
81	UPD65654GF-260	Convergence spline processor	IC102	Convergence	Convergence panel
82	M24C32	Digital Convergence NVM	IC101	Convergence	Convergence panel
83	TDA8444	Interface I/O expander	IC7001	Interface	Interface panel

Remark:If on the DST the text "ERROR 2" is displayed, this means that the communication from the TV to the DST has failed

5.4 Fault find trees

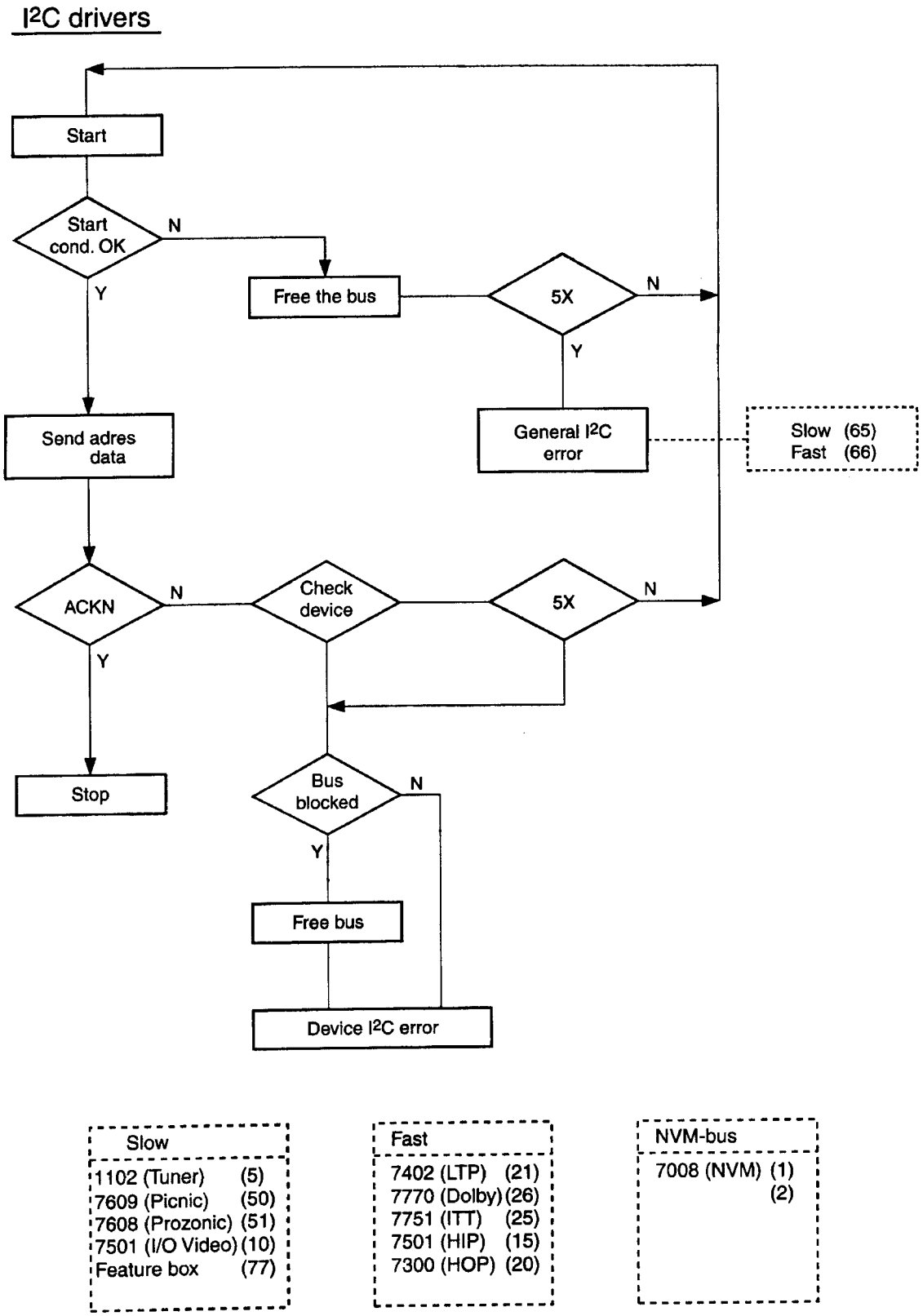


Figure 5-6

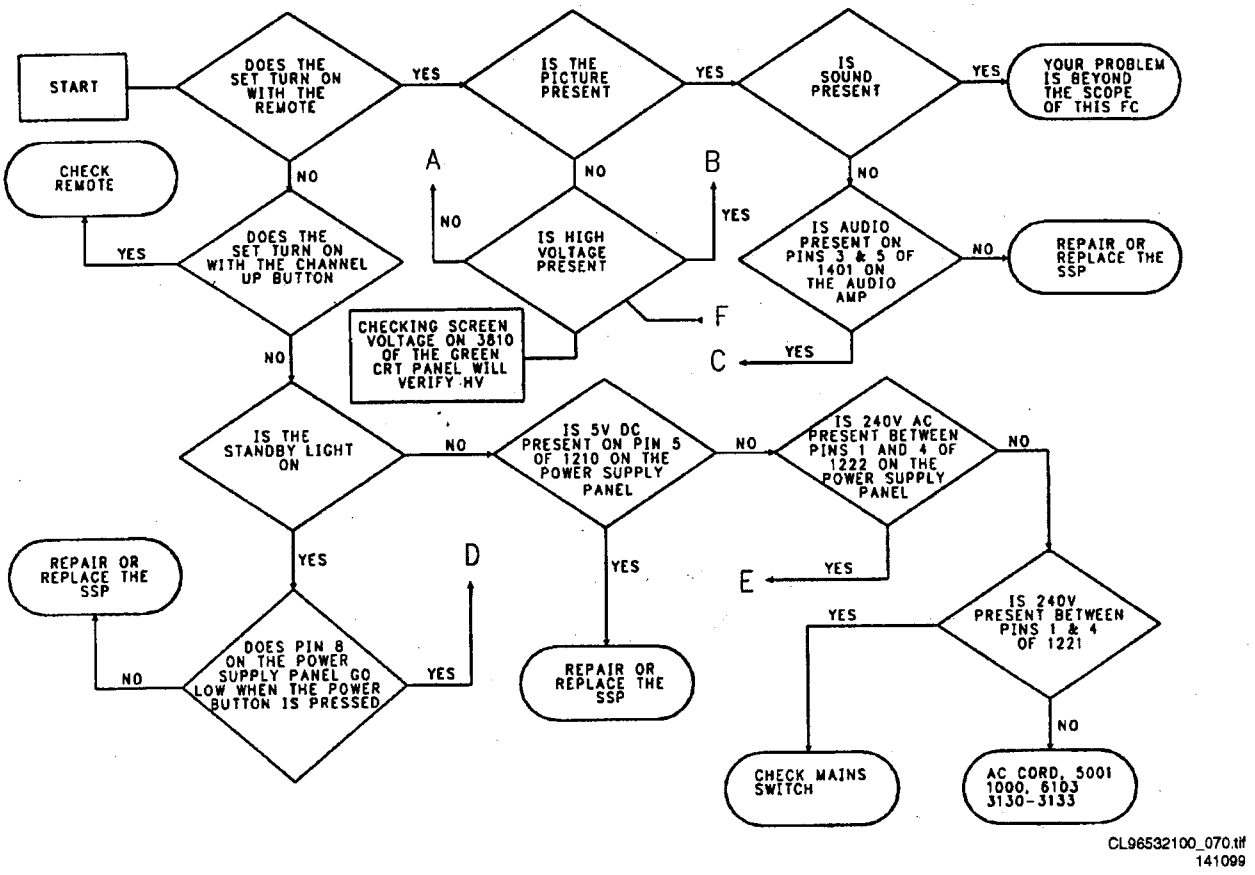


Figure 5-7

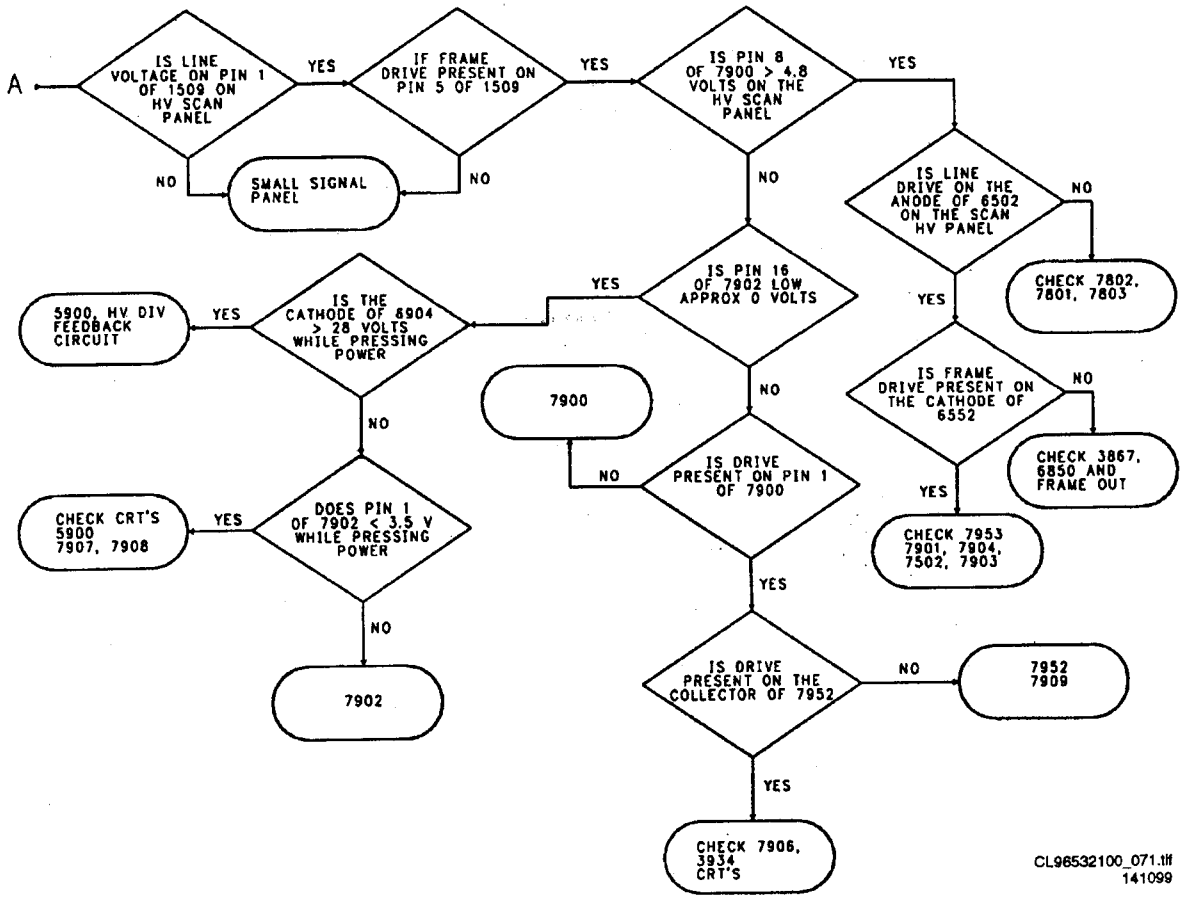
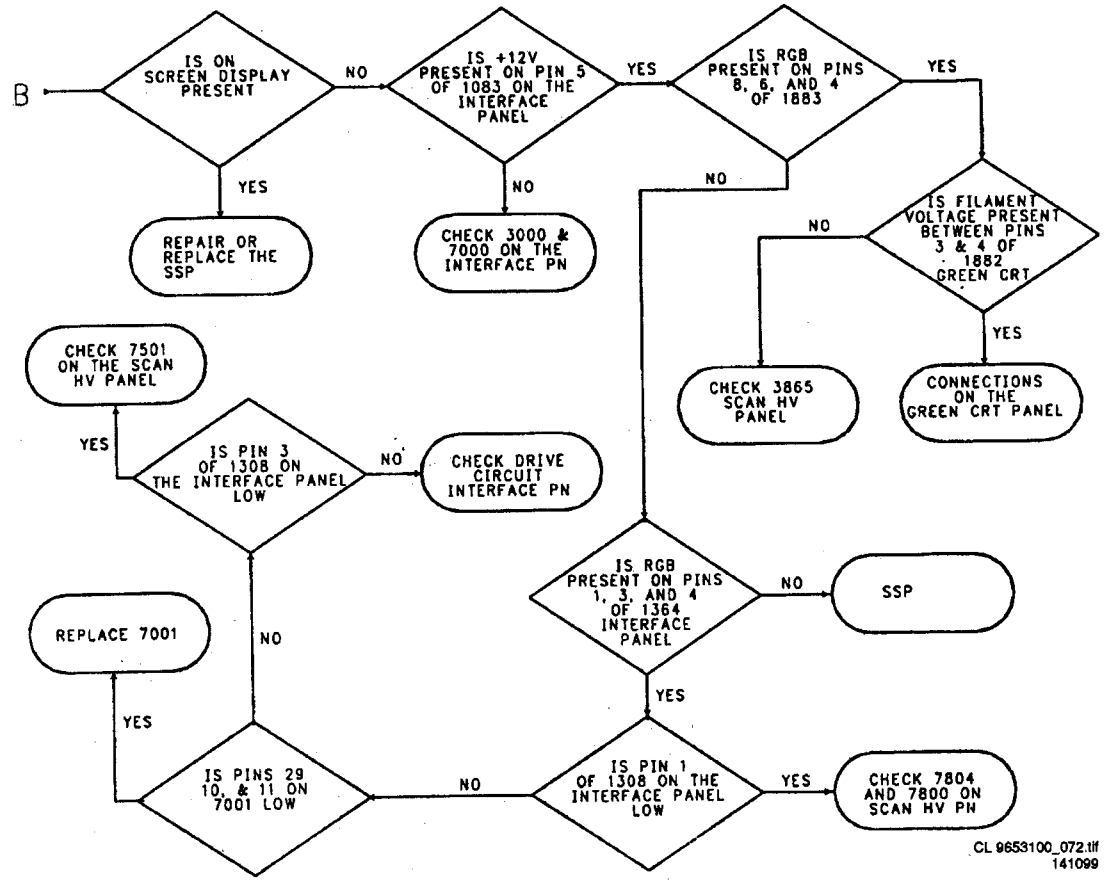


Figure 5-8


B
IS ON SCREEN DISPLAY PRESENT
NO
IS +12V PRESENT ON PIN 5 OF 1083 ON THE INTERFACE PANEL
YES
IS RGB PRESENT ON PINS 8, 6, AND 4 OF 1883
YES
YES
REPAIR OR REPLACE THE SSP
NO
CHECK 3000 & 7000 ON THE INTERFACE PN
NO
IS FILAMENT VOLTAGE PRESENT BETWEEN PINS 3 & 4 OF 1882 GREEN CRT
NO
CHECK 3865 SCAN HV PANEL
YES
CONNECTIONS ON THE GREEN CRT PANEL
CHECK 7501 ON THE SCAN HV PANEL
YES
IS PIN 3 OF 1308 ON THE INTERFACE PANEL LOW
NO
CHECK DRIVE CIRCUIT INTERFACE PN
IS RGB PRESENT ON PINS 1, 3, AND 4 OF 1364 INTERFACE PANEL
NO
SSP
REPLACE 7001
NO
YES
YES
IS PINS 29 10, & 11 ON 7001 LOW
NO
IS PIN 1 OF 1308 ON THE INTERFACE PANEL LOW
YES
CHECK 7804 AND 7800 ON SCAN HV PN
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141099

Figure 5-9

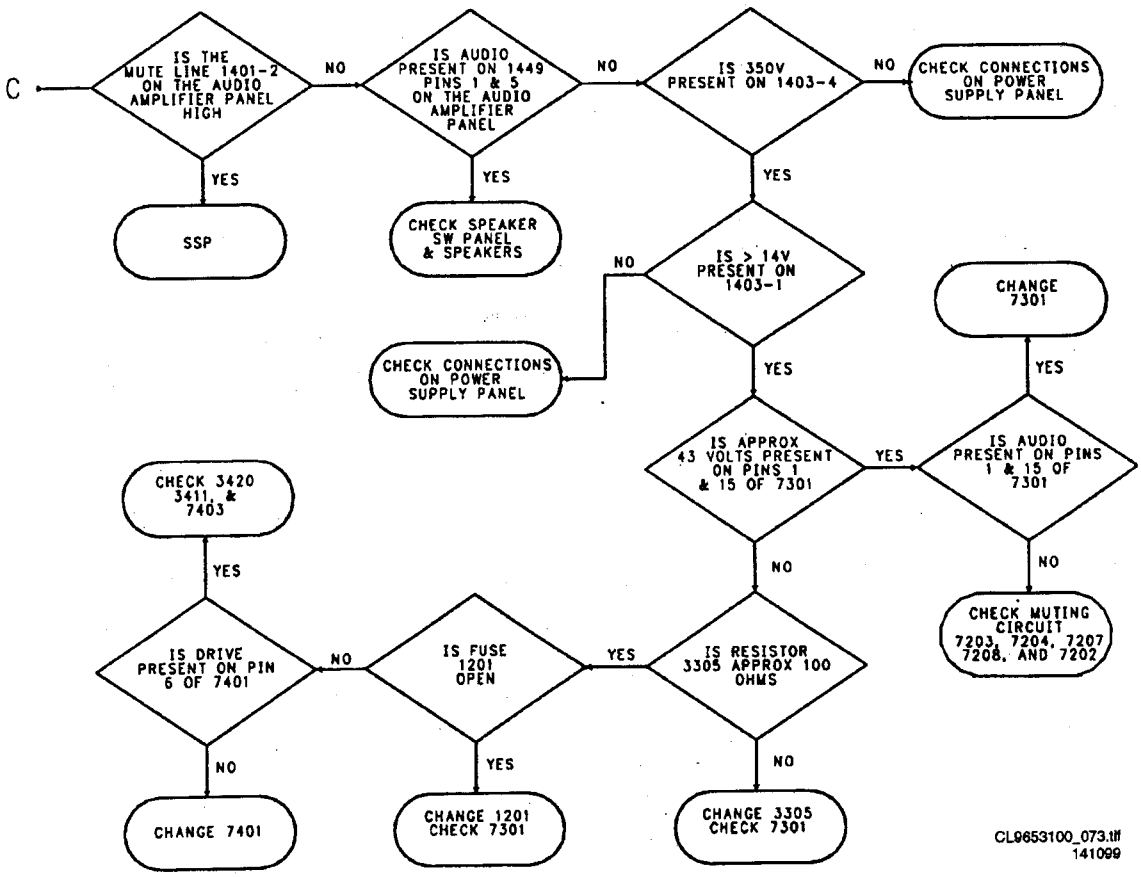


Figure 5-10

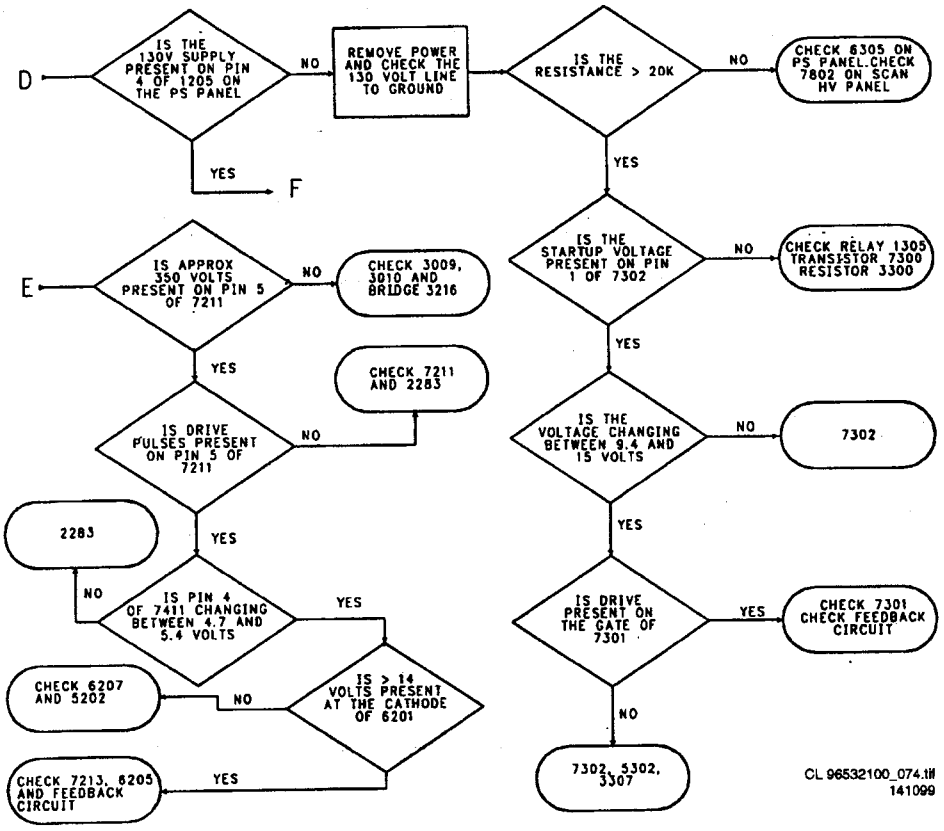


Figure 5-11

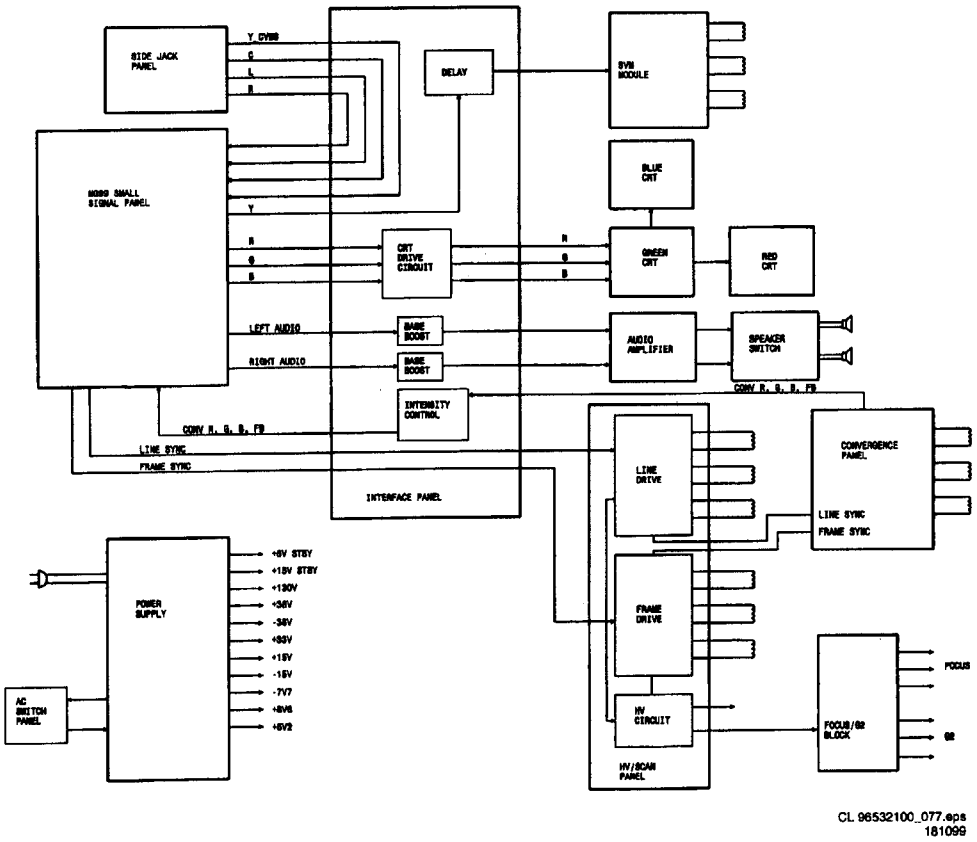
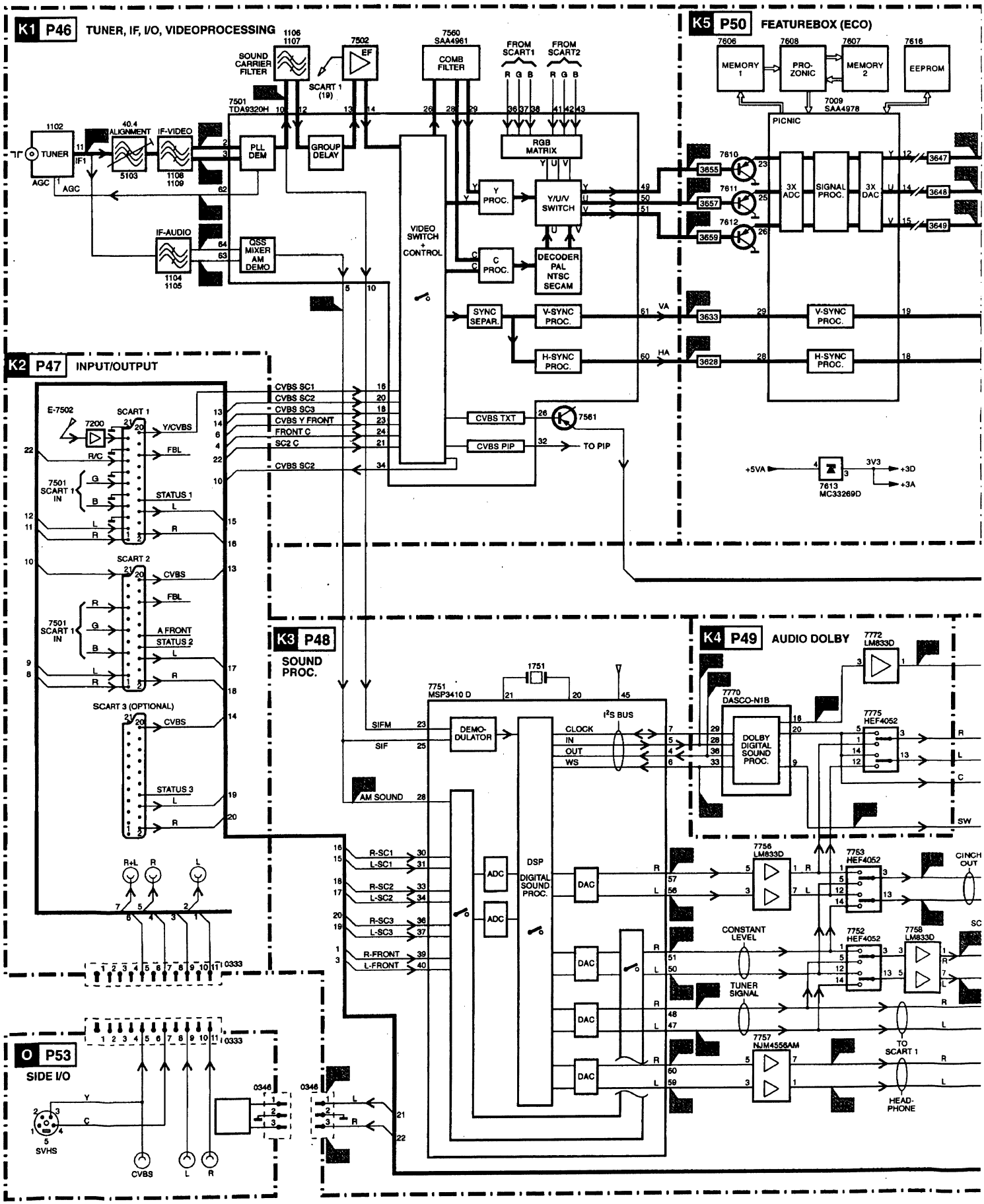
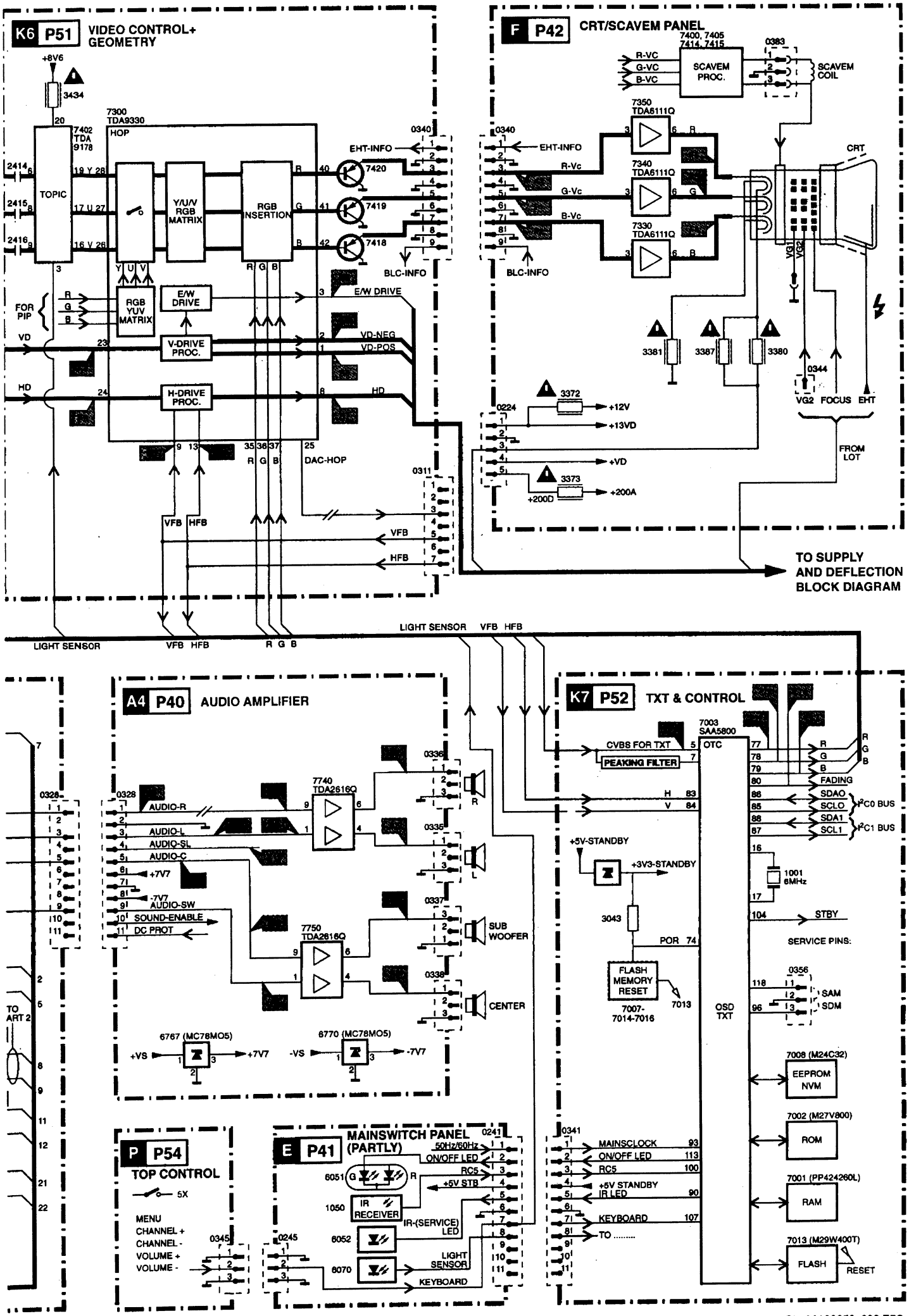


Figure 5-12

6. Block diagrams





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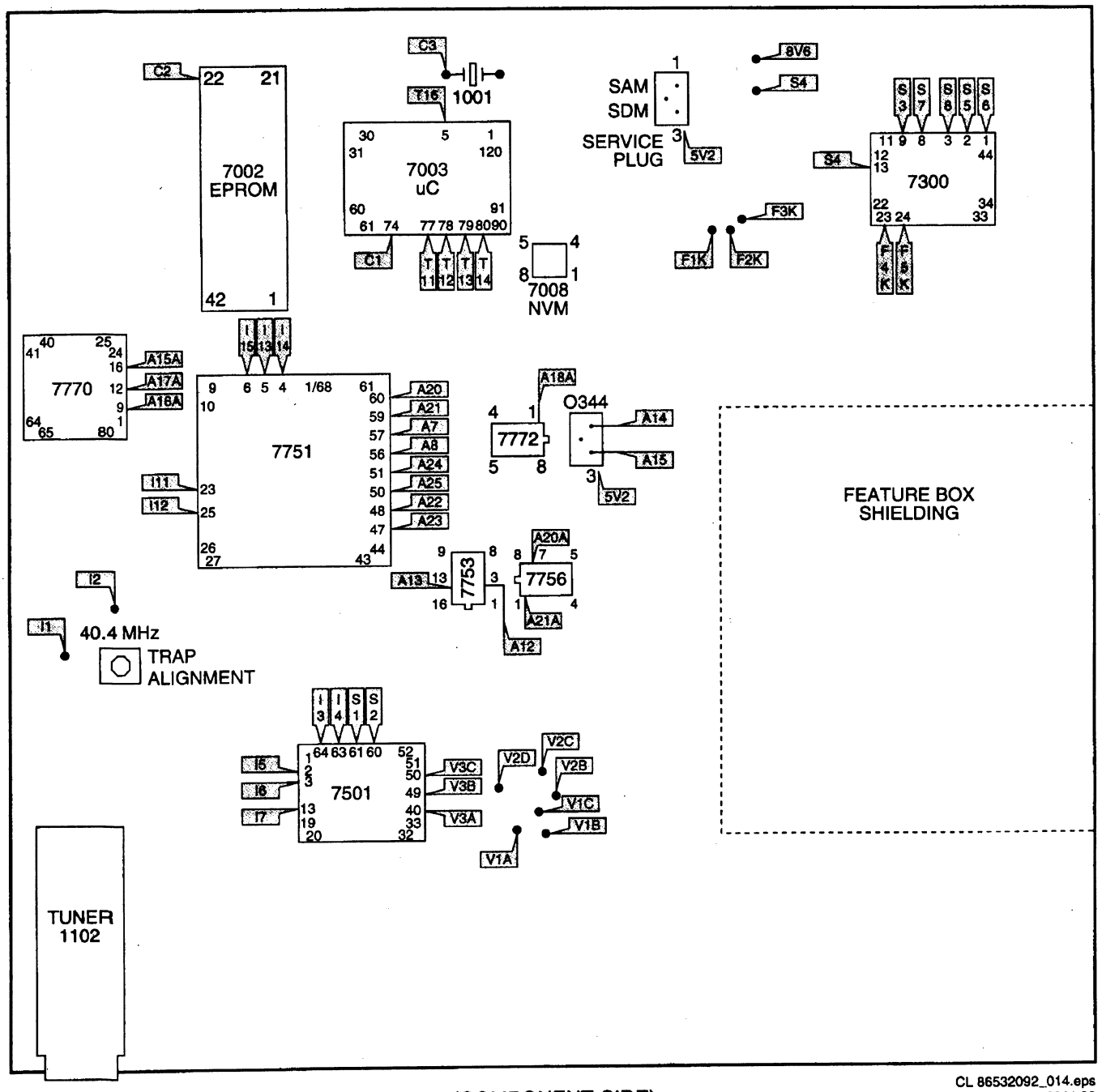

(COMPONENT-SIDE)

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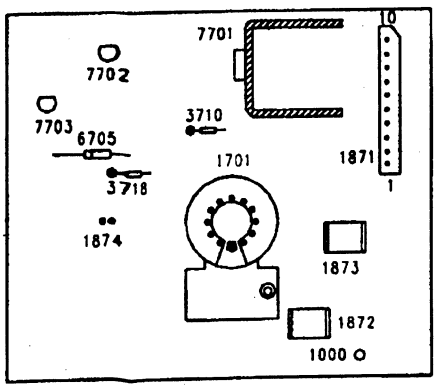
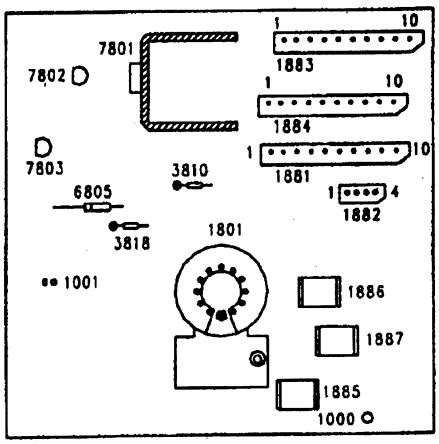
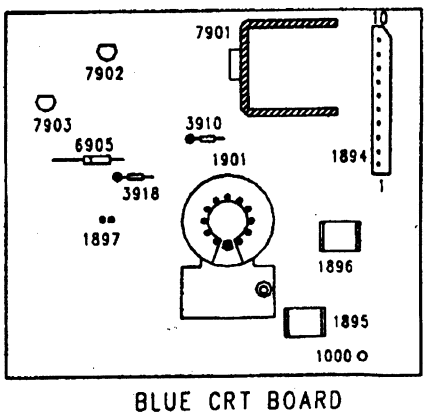
2011 98



RED CRT BOARD



GREEN CRT BOARD



BLUE CRT BOARD

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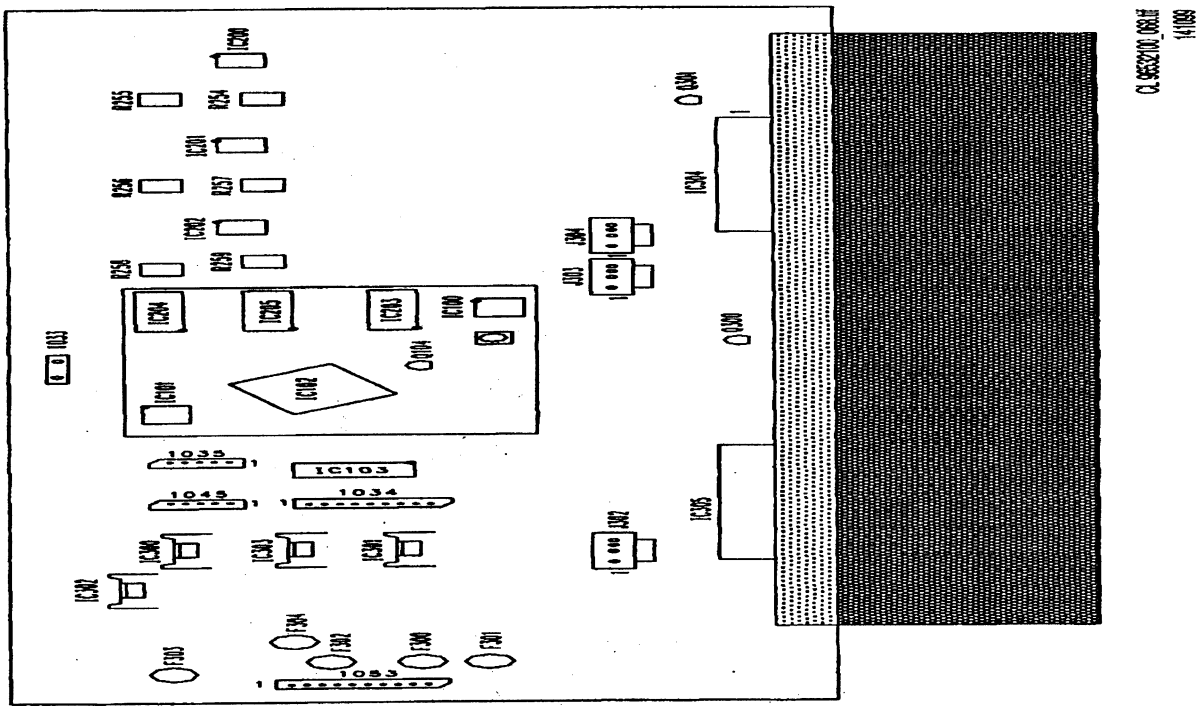
CONVERGENCE PANEL WIRING INTERCONNECT



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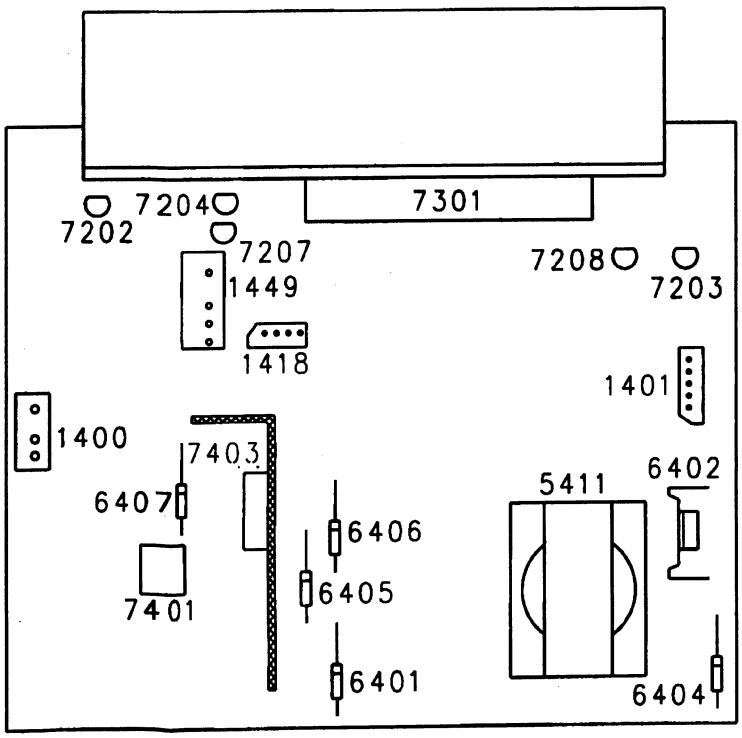
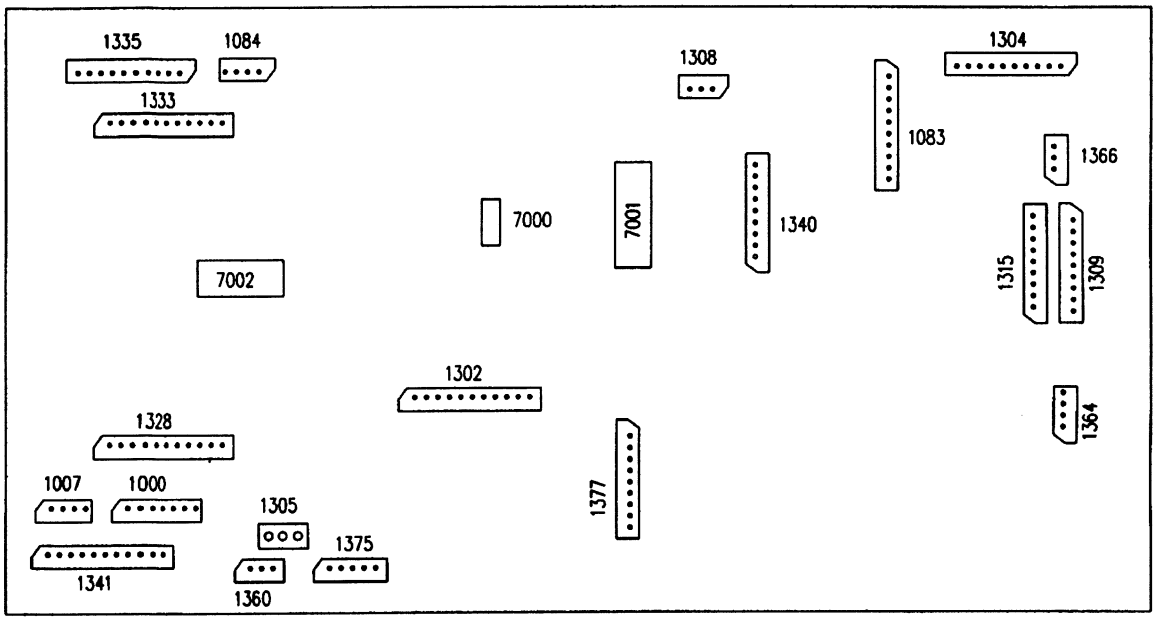
AUDIO AMPLIFIER COMPONENT LOCATION



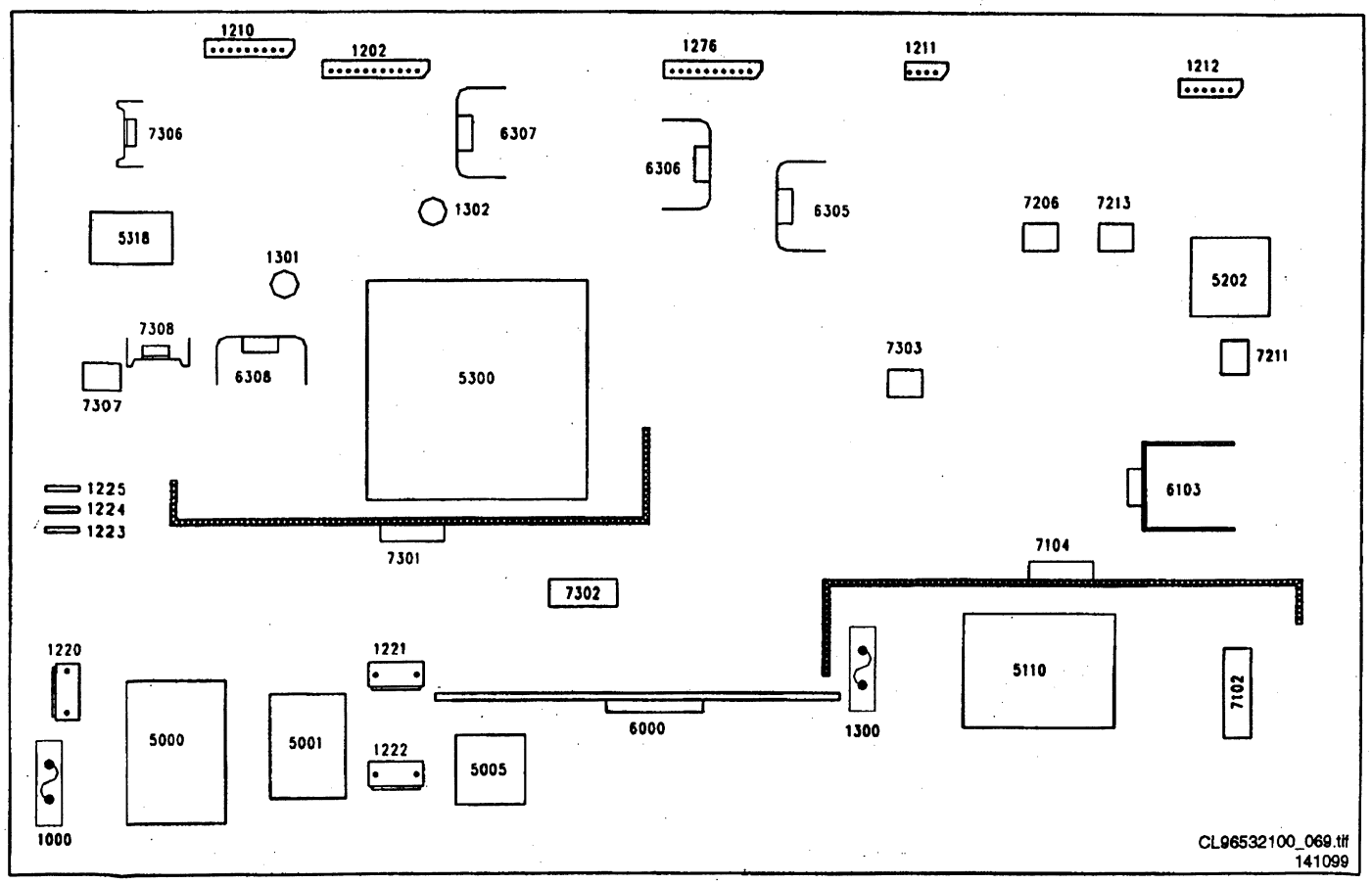
CL96532100_022.eps
051099

INTERFACE PANEL COMPONENT LOCATION



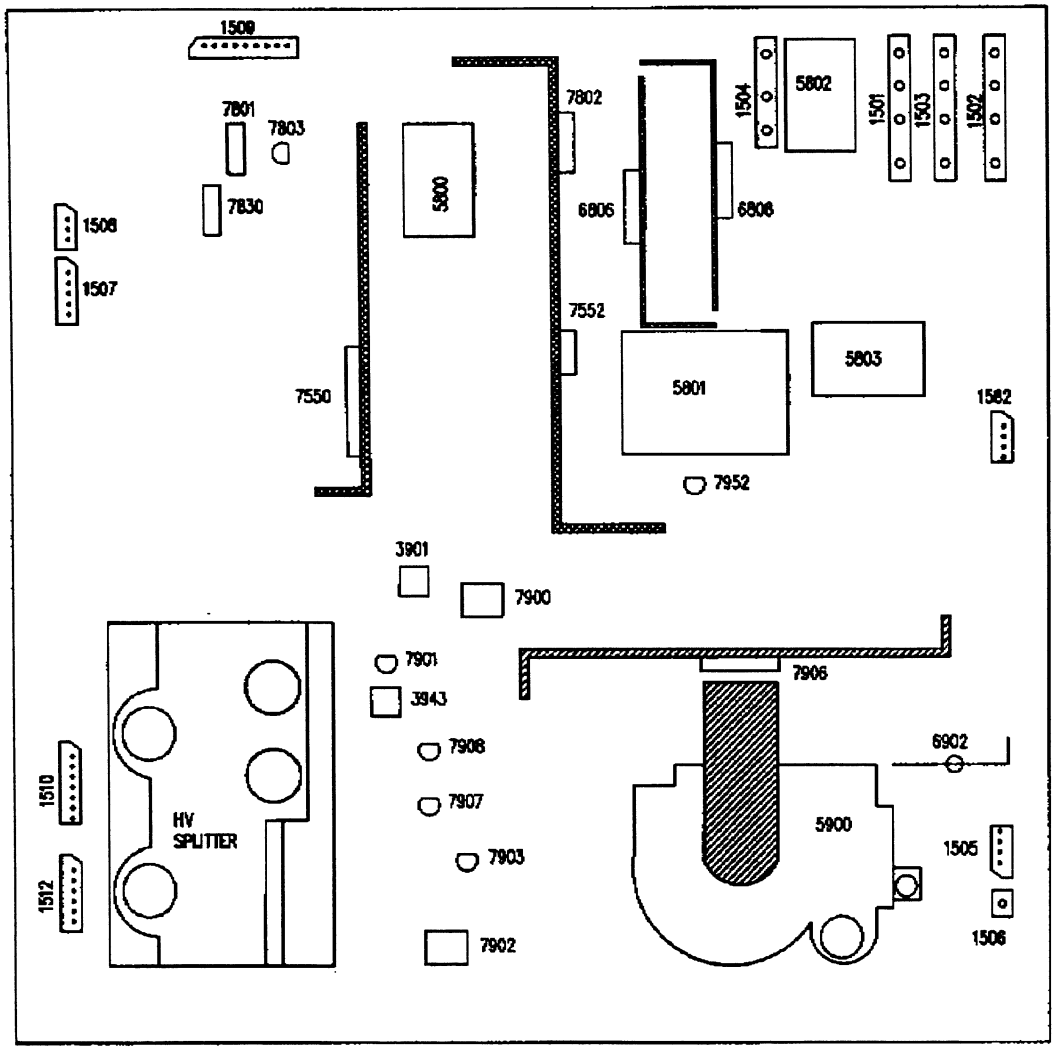
CL96532100_021.eps
051099

POWER SUPPLY COMPONENT LOCATION



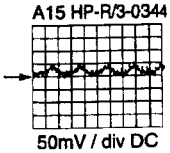
CL96532100_069.tif
141099

HIGH VOLTAGE COMPONENT LOCATION



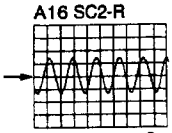
CL96532100_020.eps
051099

A15 HP-R/3-0344



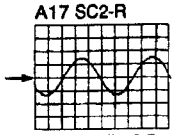
50mV / div DC
0.5ms / div

A16 SC2-R



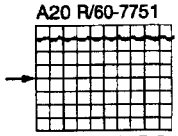
0.5V / div AC
0.2ms / div

A17 SC2-R



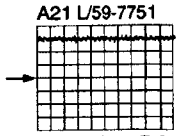
0.5V / div AC
0.2ms / div

A20 R/60-7751



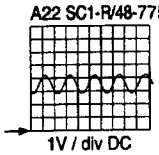
20mV / div DC
1ms / div

A21 L/59-7751



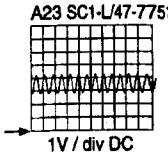
20mV / div DC
1ms / div

A22 SC1-R/48-7751



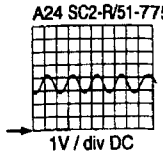
1V / div DC
0.5ms / div

A23 SC1-L/47-7751



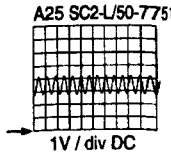
1V / div DC
0.5ms / div

A24 SC2-R/51-7751



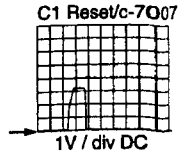
1V / div DC
0.5ms / div

A25 SC2-L/50-7751



1V / div DC
0.5ms / div

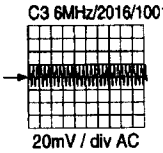
C1 Reset/c-7007



1V / div DC
10ms / div

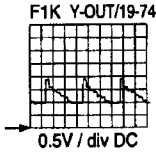
C2 +3V3

C3 6MHz/2016/1001



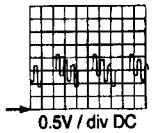
20mV / div AC
0.5µs / div

F1K Y-OUT/19-7402



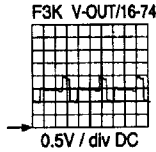
0.5V / div DC
10µs / div

F2K U-OUT/17-7402



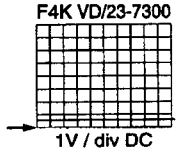
0.5V / div DC
10µs / div

F3K V-OUT/16-7402



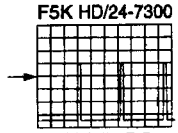
0.5V / div DC
10µs / div

F4K VD/23-7300



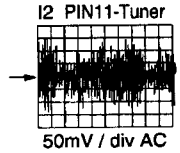
1V / div DC
5ms / div

F5K HD/24-7300



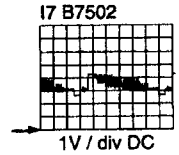
1V / div DC
10µs / div

I2 PIN11-Tuner



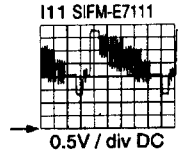
50mV / div AC
10µs / div

I7 B7502

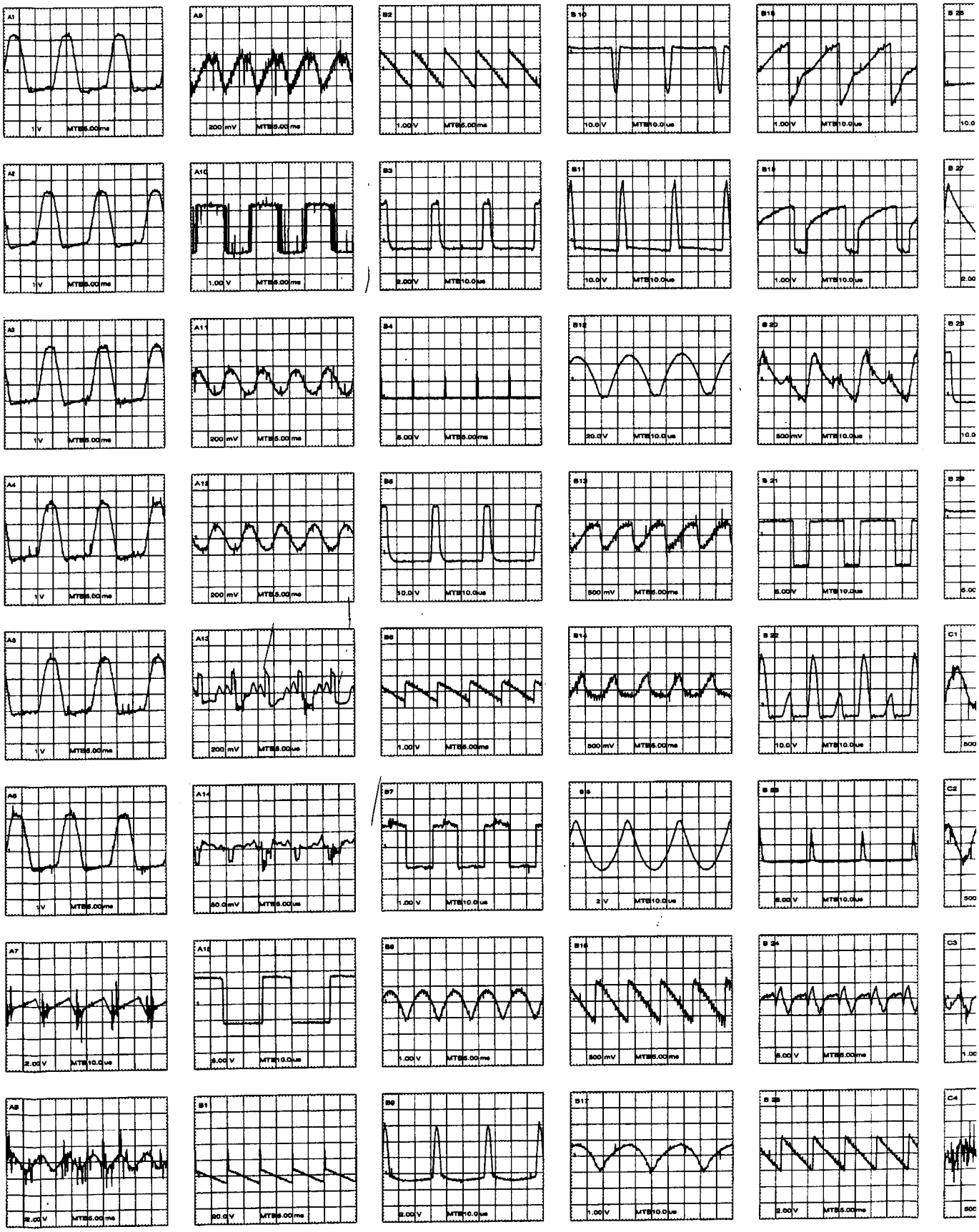


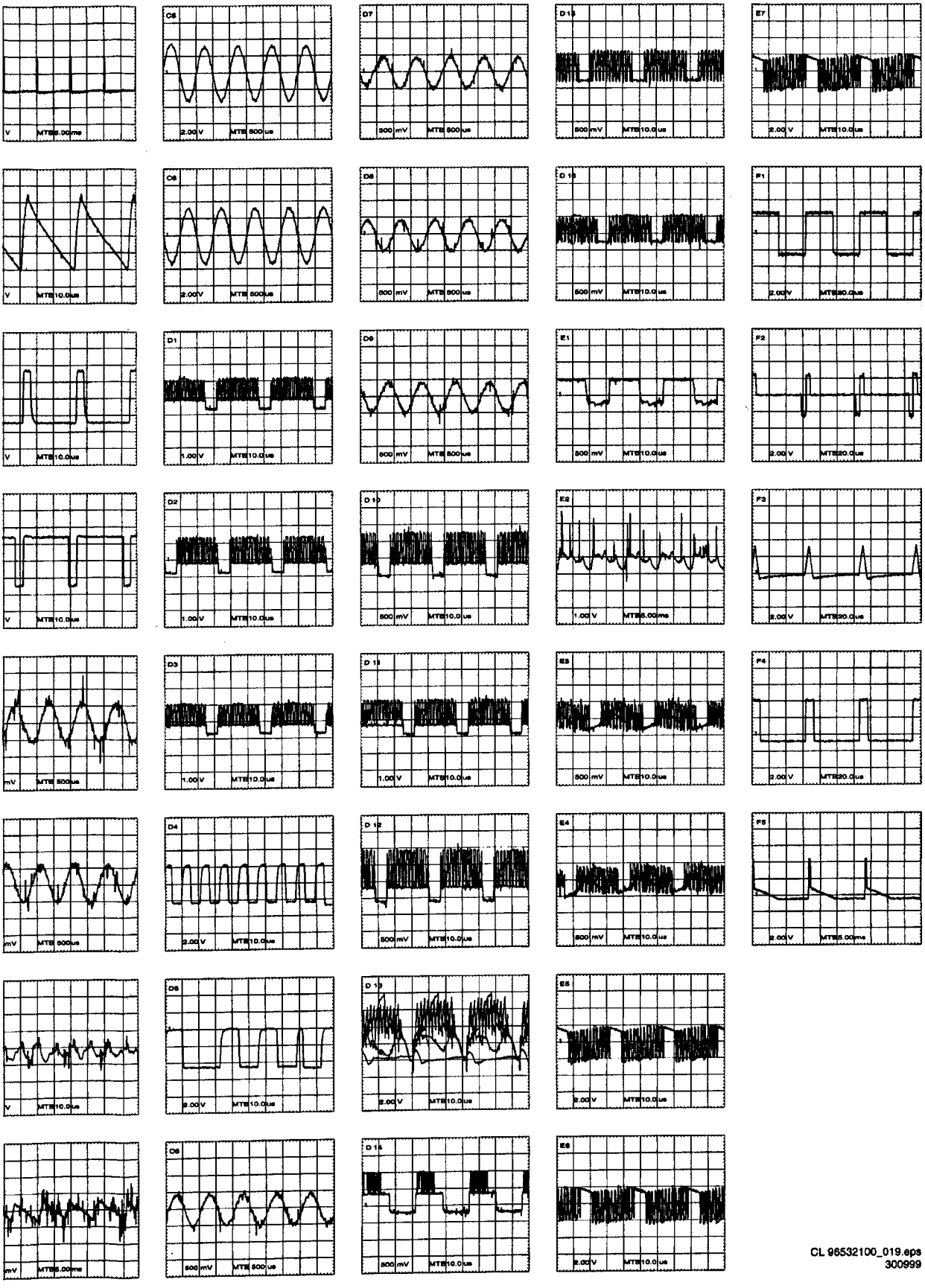
1V / div DC
10µs / div

I11 SIFM-E7111



0.5V / div DC
10µs / div

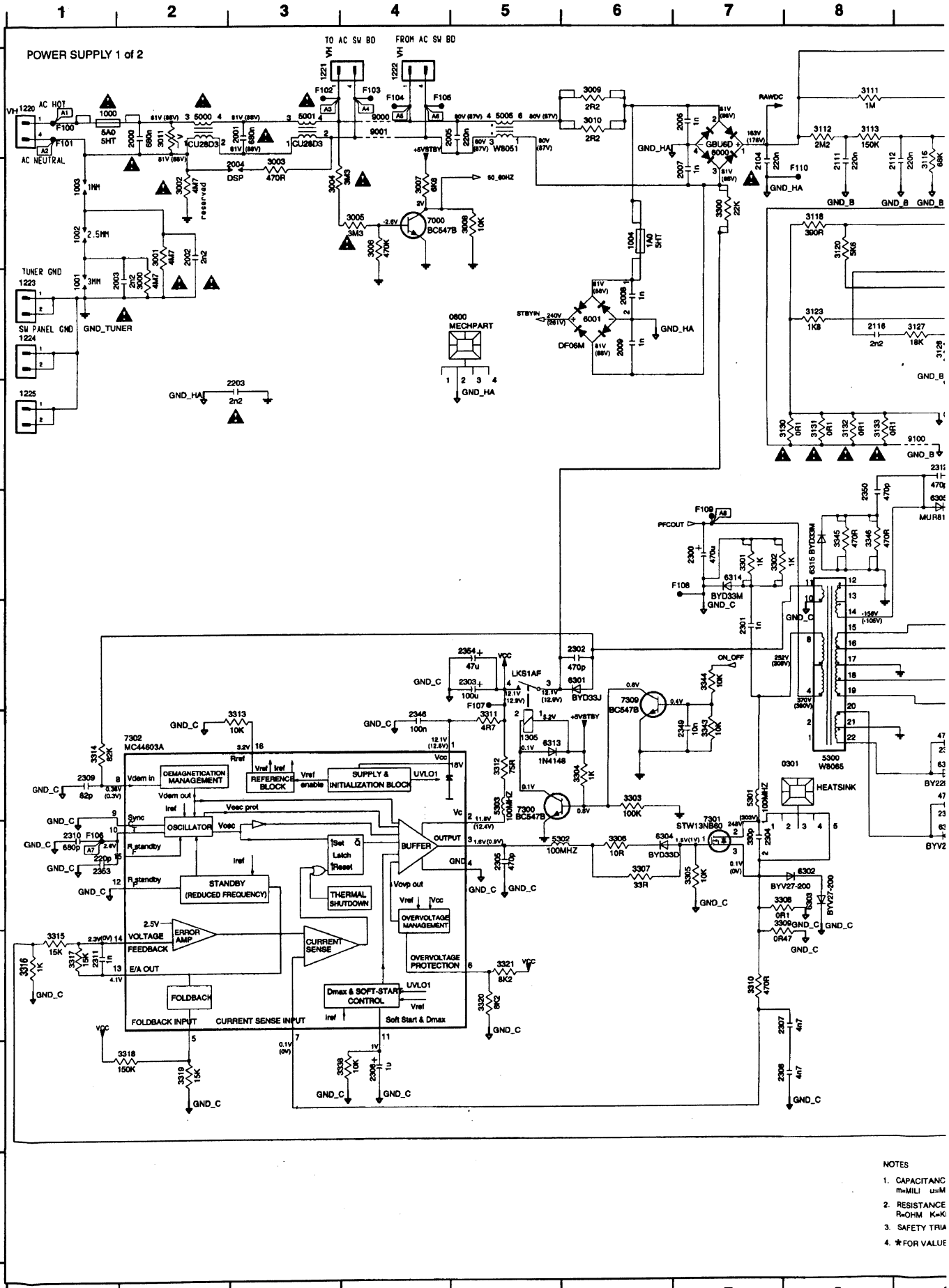


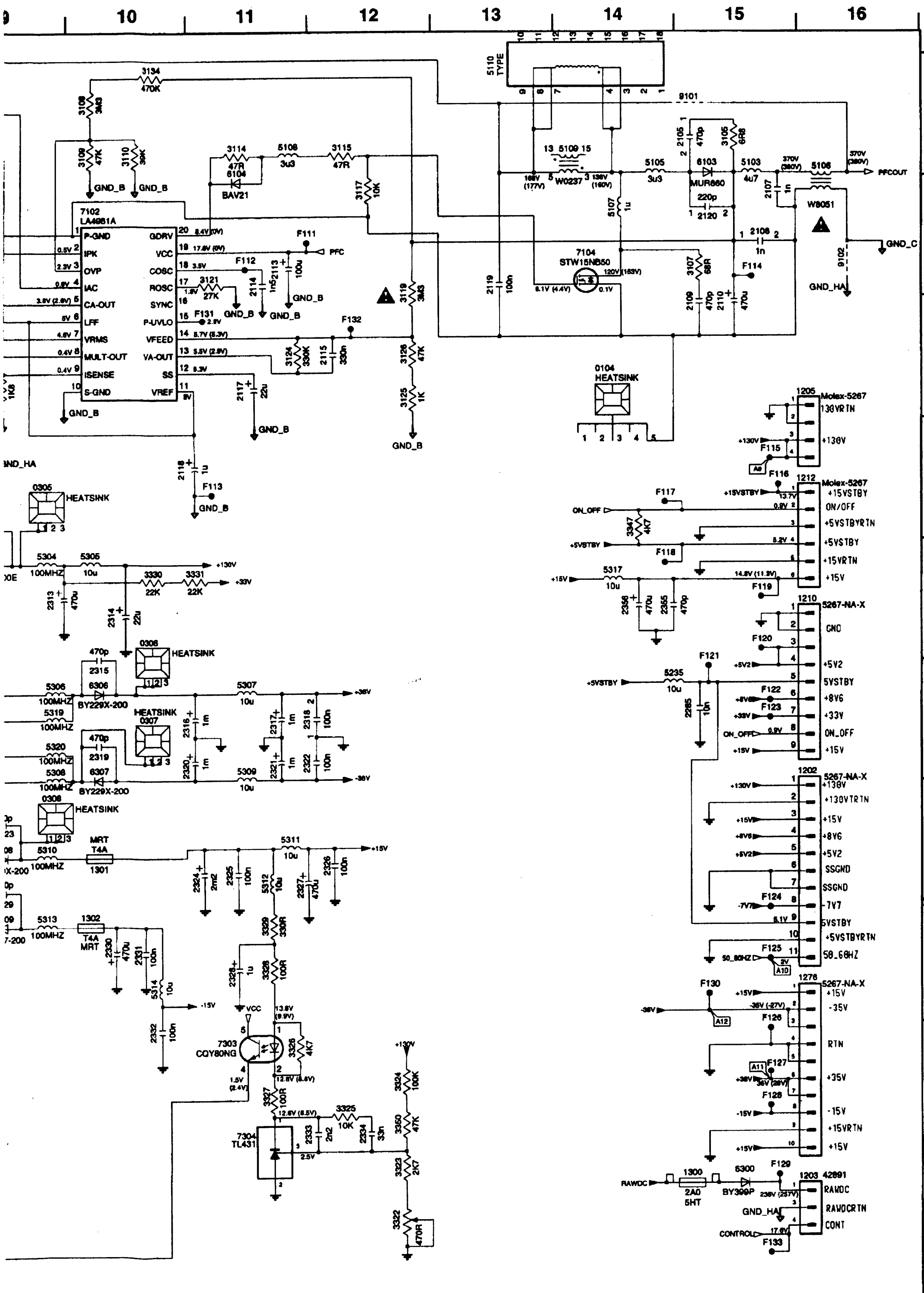


CL 96532100_019.eps
300999

7. Electrical diagrams and print lay-outs

Power supply



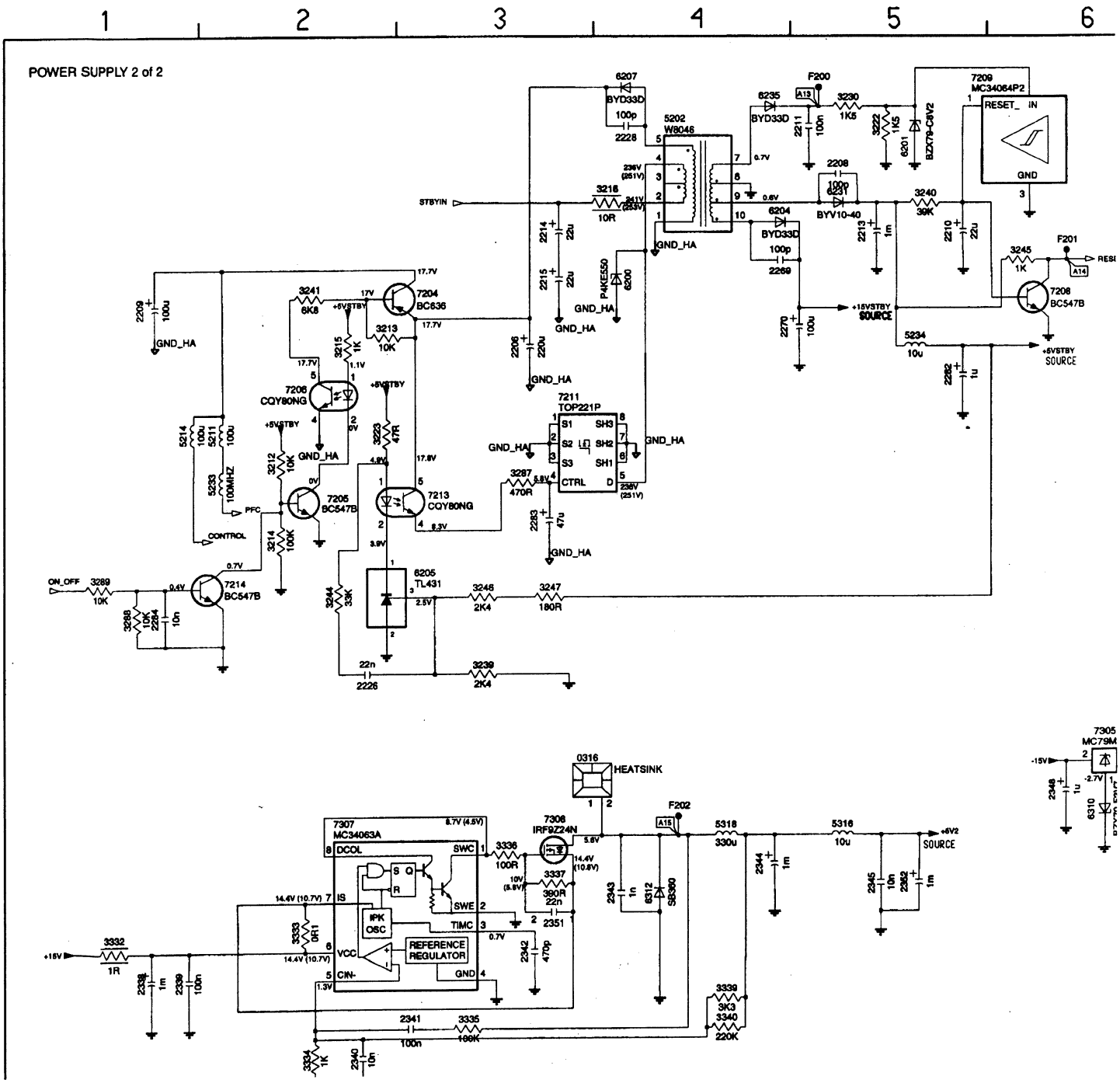


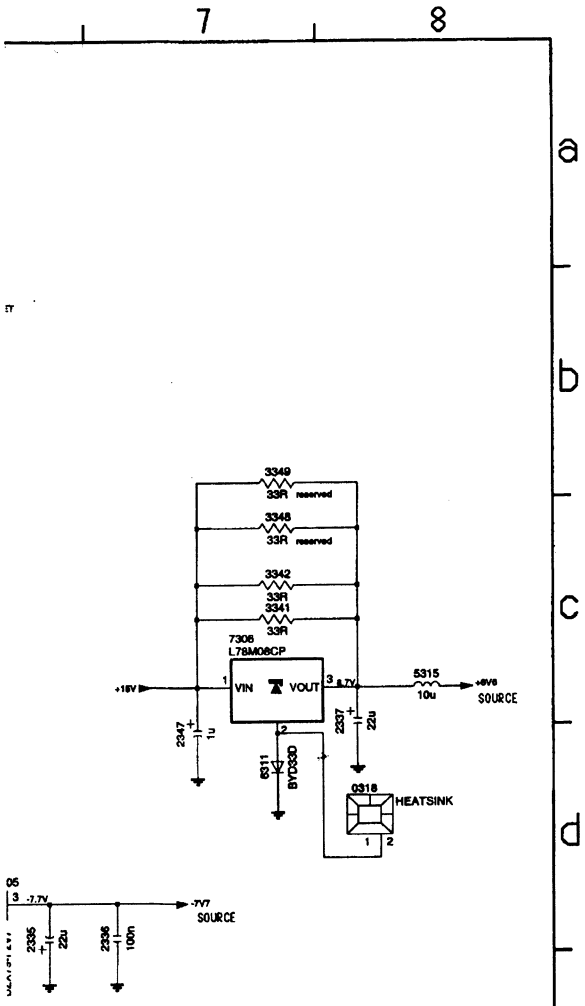
E VALUES ARE IN FARADS:
CRO n=NANO p=PICO f=FEMTO
VALUES ARE IN OHMS:
LO M=MEGA G=GIGA T=TERA
NGE REPRESENTS PCEC REPLACEMENT PART ONLY.
SEE PARTS LIST.

CL 96532100_014.eps
150999

0104 C14	3133 D8
0301 G7	3134 A10
0305 D9	3300 B7
0306 E10	3301 E7
0307 F10	3302 E7
0308 G9	3303 G6
0600 C4	3304 G6
1000 A1	3305 H7
1001 C1	3306 H6
1002 B1	3307 H6
1003 B1	3308 H7
1004 B6	3309 I7
1202 F16	3310 I7
1203 J16	3311 G5
1205 C15	3312 G5
1210 E16	3313 G3
1212 D16	3314 G1
1220 A1	3315 I1
1221 A3	3316 I1
1222 A4	3317 I1
1223 C1	3318 J2
1224 C1	3319 J2
1225 D1	3320 I5
1276 H16	3321 I5
1300 J15	3322 J12
1301 G10	3323 J12
1302 H10	3324 I12
1305 G5	3325 I12
2000 A2	3326 I11
2001 A3	3327 I11
2002 B2	3328 H11
2003 C2	3329 H11
2004 B3	3330 E10
2005 A5	3331 E11
2006 A7	3338 J4
2007 B7	3343 G7
2008 C6	3344 F7
2009 C6	3345 E8
2104 B7	3346 E8
2105 A15	3347 D14
2107 B15	3350 I12
2108 B15	5000 A2
2109 C15	5001 A3
2110 C15	5005 A5
2111 B8	5103 A15
2112 B9	5105 A14
2113 B11	5106 A16
2114 B11	5107 B14
2115 C12	5108 A11
2116 C8	5109 A14
2117 C11	5110 A13
2118 D10	5235 F14
2119 B13	5300 G8
2120 B15	5301 G7
2203 D3	5302 H5
2285 F15	5303 G5
2300 E7	5304 E9
2301 F7	5305 E10
2302 F6	5306 F9
2303 F5	5307 F11
2304 H7	5308 F9
2305 H5	5309 F11
2306 J4	5310 G9
2307 I8	5311 G11
2308 J8	5312 G11
2309 G1	5313 H9
2310 H1	5314 H10
2311 I1	5317 E14
2312 D9	5319 F9
2313 E9	5320 F9
2314 E10	6000 A7
2315 F10	6001 C6
2316 F11	6103 A15
2317 F11	6104 A11
2318 F12	6300 J15
2319 F10	6301 F6
2320 F11	6302 H6
2321 F11	6303 H6
2322 F12	6304 H6
2323 G9	6305 E9
2324 G11	6306 F10
2325 G11	6307 F10
2326 G12	6308 G9
2327 G11	6309 H9
2328 H11	6313 G5
2329 G9	6314 E7
2330 H10	6315 E8
2331 H10	7000 B4
2332 I10	7102 B10
2333 I12	7104 B14
2334 I12	7300 H5
2346 G4	7301 H7
2349 G7	7302 G2
2350 E8	7303 I11
2353 H1	7304 I11
2354 F5	7309 F6
2355 E14	9000 A4
2356 E14	9001 A4
3000 C2	9100 D9
3001 B2	9101 A15
3002 B2	9102 B16
3003 B3	F100 A1
3004 B3	F101 A1
3005 B4	F102 A3
3006 B4	F103 A4
3007 B4	F104 A4
3008 B5	F105 A4
3009 A6	F106 H1
3010 A6	F107 G5
3011 A2	F108 E7
3106 A15	F109 E7
3107 B15	F110 B8
3108 A10	F111 B11
3109 A10	F112 B11
3110 A10	F113 D11
3111 A8	F114 B15
3112 A8	F115 D15
3113 A8	F116 D15
3114 A11	F117 D14
3115 A12	F118 E14
3116 B9	F119 E15
3117 B12	F120 E16
3118 B8	F121 E15
3119 B12	F122 F16
3120 B8	F123 F15
3121 B11	F124 G15
3123 C8	F125 H15
3124 C11	F126 H15
3125 C12	F127 I15
3126 C12	F128 I15
3127 C9	F129 J15
3128 C9	F130 H15
3130 D8	F131 C11
3131 D8	F132 C12
3132 D8	F133 J15

Power supply



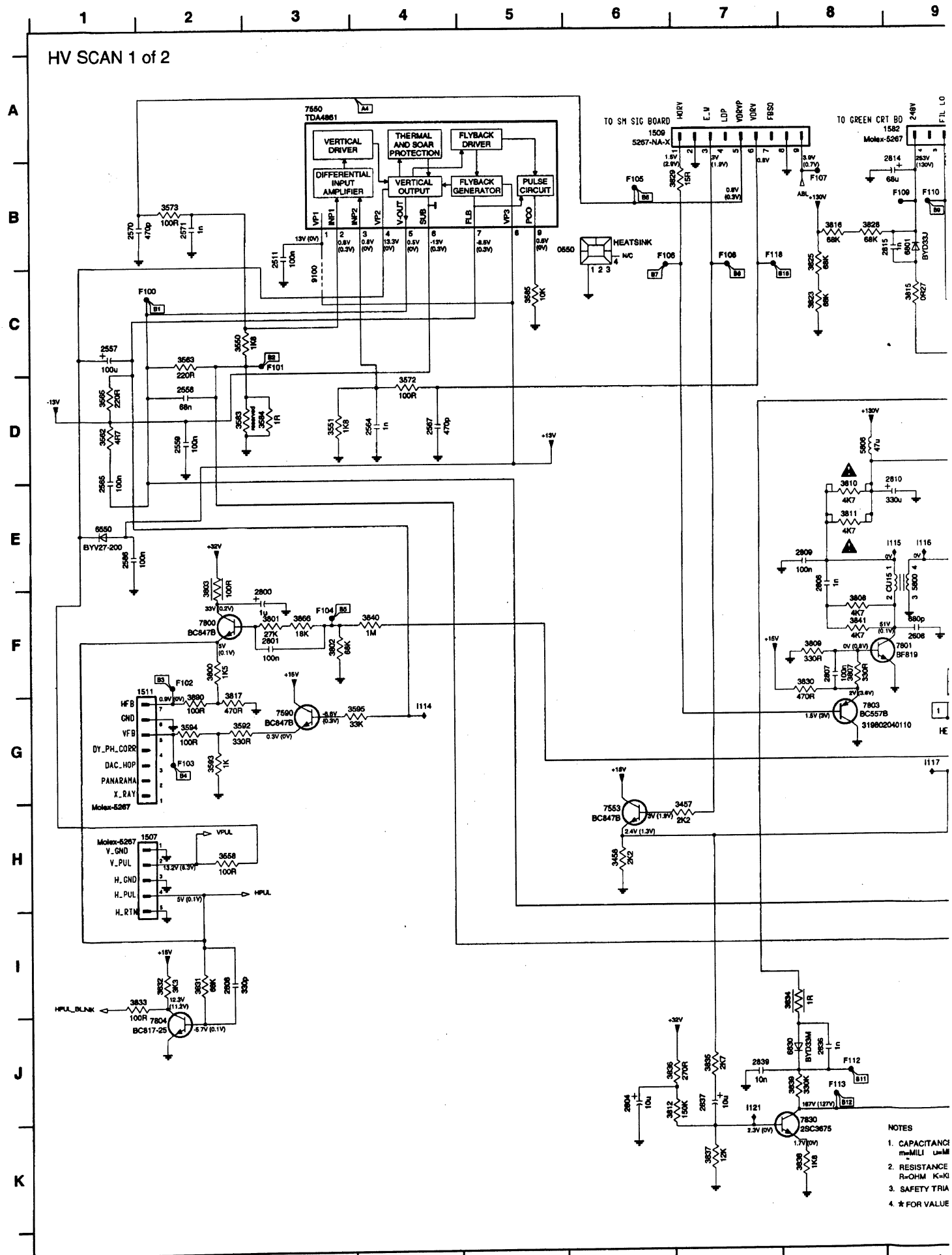


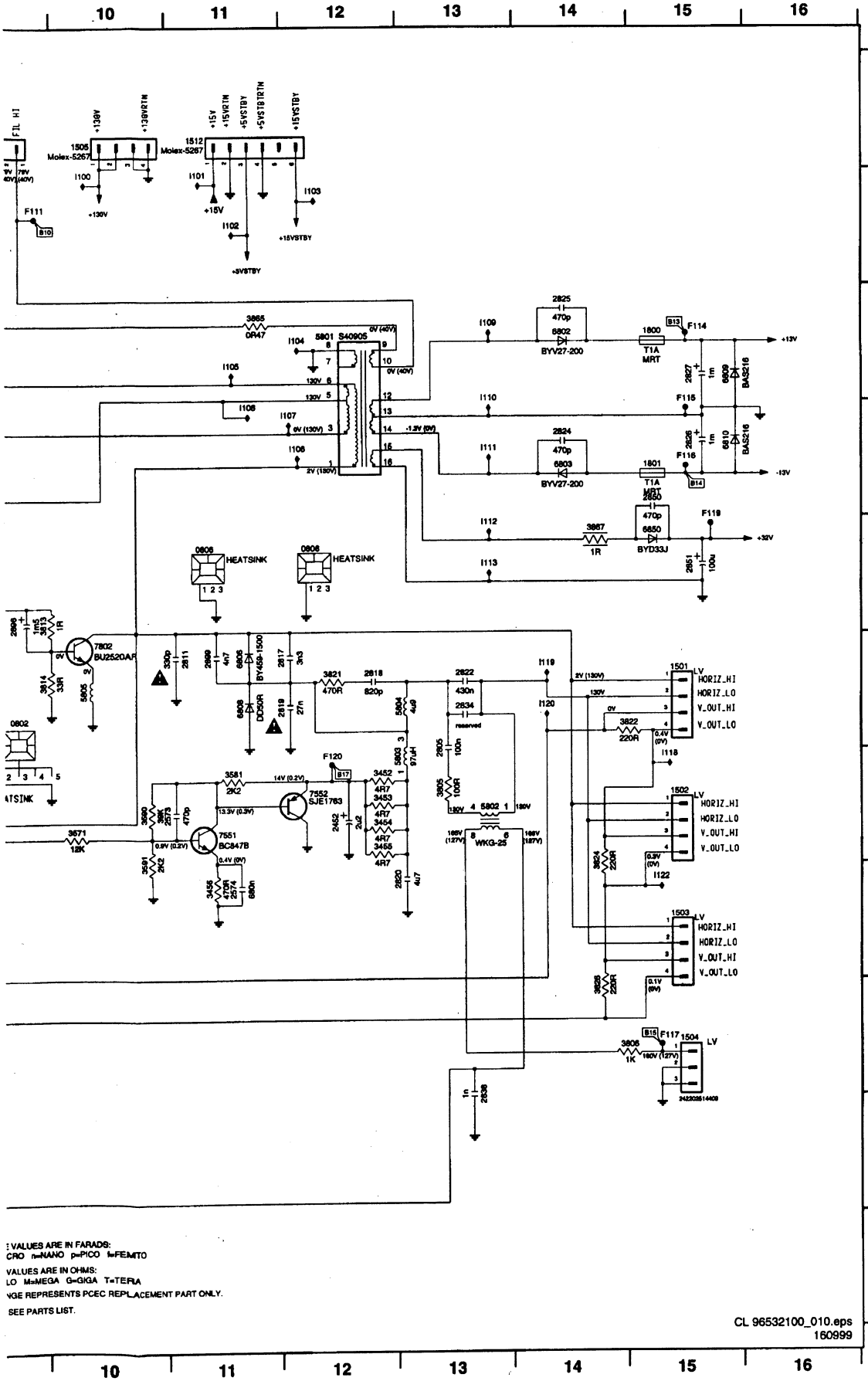
NOTES

1. CAPACITANCE VALUES ARE IN FARADS:
   m=MILI u=MICRO n=NANO p=PICO f=FEMTO
2. RESISTANCE VALUES ARE IN OHMS:
   R=OHM K=KILO M=MEGA G=GIGA T=TERA
3. SAFETY TRIANGE REPRESENTS PCEC REPLACEMENT PART ONLY.
4. ★ FOR VALUE SEE PARTS LIST.

CL 96532100_015.eps
160999

HV SCAN


HV SCAN 1 of 2
7550
TDA4861
VERTICAL DRIVER
THERMAL AND SOAR PROTECTION
FLYBACK DRIVER
DIFFERENTIAL INPUT AMPLIFIER
VERTICAL OUTPUT
FLYBACK GENERATOR
PULSE CIRCUIT
TO SM SIG BOARD
1509
5267-NA-X
TO GREEN CRT BD
1582
Molex-5267
HEATSINK
BC847B
BC817-25
BC557B
BF819
BYV27-200
BYD33J
BYD33M
2SC3675
Molex-5267
NOTES
1. CAPACITANCE
2. RESISTANCE
3. SAFETY TRIA
4. ★ FOR VALUE



VALUES ARE IN FARADS:
CRO n=NANO p=PICO f=FEMTO

VALUES ARE IN OHMS:
LO M=MEGA G=GIGA T=TERA

NGE REPRESENTS PCEC REPLACEMENT PART ONLY.

SEE PARTS LIST.

CL 96532100_010.eps
160999

0550 B5
0802 F9
0806 E11
0808 E12
1501 F15
1502 G15
1503 H15
1504 I15
1505 A10
1507 H2
1509 A6
1511 F2
1512 A11
1582 A9
1800 C15
1801 D15
2452 G12
2511 B3
2567 C1
2568 D2
2569 D2
2584 D4
2585 D1
2587 D4
2578 B1
2571 B2
2573 G11
2574 H11
2586 E1
2808 F9
2800 F3
2801 F3
2804 J6
2805 F13
2806 E8
2807 F8
2808 I2
2809 E8
2810 E9
2811 F11
2814 B8
2815 B9
2817 F12
2818 F12
2819 F12
2820 H13
2822 F13
2824 D14
2825 C14
2826 D15
2827 C15
2834 F13
2836 J8
2837 J7
2838 I13
2839 J7
2850 D15
2851 E15
2898 E9
2899 F11
3452 G12
3453 G12
3454 G12
3455 G12
3456 H11
3457 H7
3458 H6
3550 C2
3551 D3
3558 H2
3562 D1
3563 C2
3565 D1
3571 G10
3572 D4
3573 B2
3581 G11
3583 D2
3584 D3
3585 C5
3590 G10
3591 G10
3592 G2
3593 G2
3594 G2
3595 G4
3800 F2
3801 F3
3802 F3
3803 E2
3805 G13
3806 I15
3807 F8
3808 F8
3809 F8
3810 E8
3811 E8
3812 J6
3813 E9
3814 F9
3815 C8
3816 B8
3817 G2
3821 F12
3822 F15
3823 C8
3824 G14
3825 B8
3826 I14
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3829 B7
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3833 I1
3834 I8
3835 J7
3836 J6
3837 K7
3838 K8
3839 J8
3840 F4
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3865 C11
3866 F3
3867 E14
3890 G2
5800 E9
5801 C12
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5803 G13
5804 F13
5805 F10
5806 D8
6550 E1
6801 B9
6802 C14
6803 D14
6806 F11
6808 F11
6809 C15
6810 D15
6830 J8
6850 E15
7550 A3
7551 G11
7552 G12
7553 H6
7590 G3
7800 F2
7801 F9
7802 F10
7803 G8
7804 J2
7830 K8
9100 C3
I100 C2
I101 C3
I102 F2
I103 G2
I104 F3
I105 B6
I106 B6
I107 B8
I108 B7
I109 B9
I110 B9
I111 B9
I112 B8
I113 E8
I114 C15
I115 D15
I116 D15
I117 H15
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I120 G12
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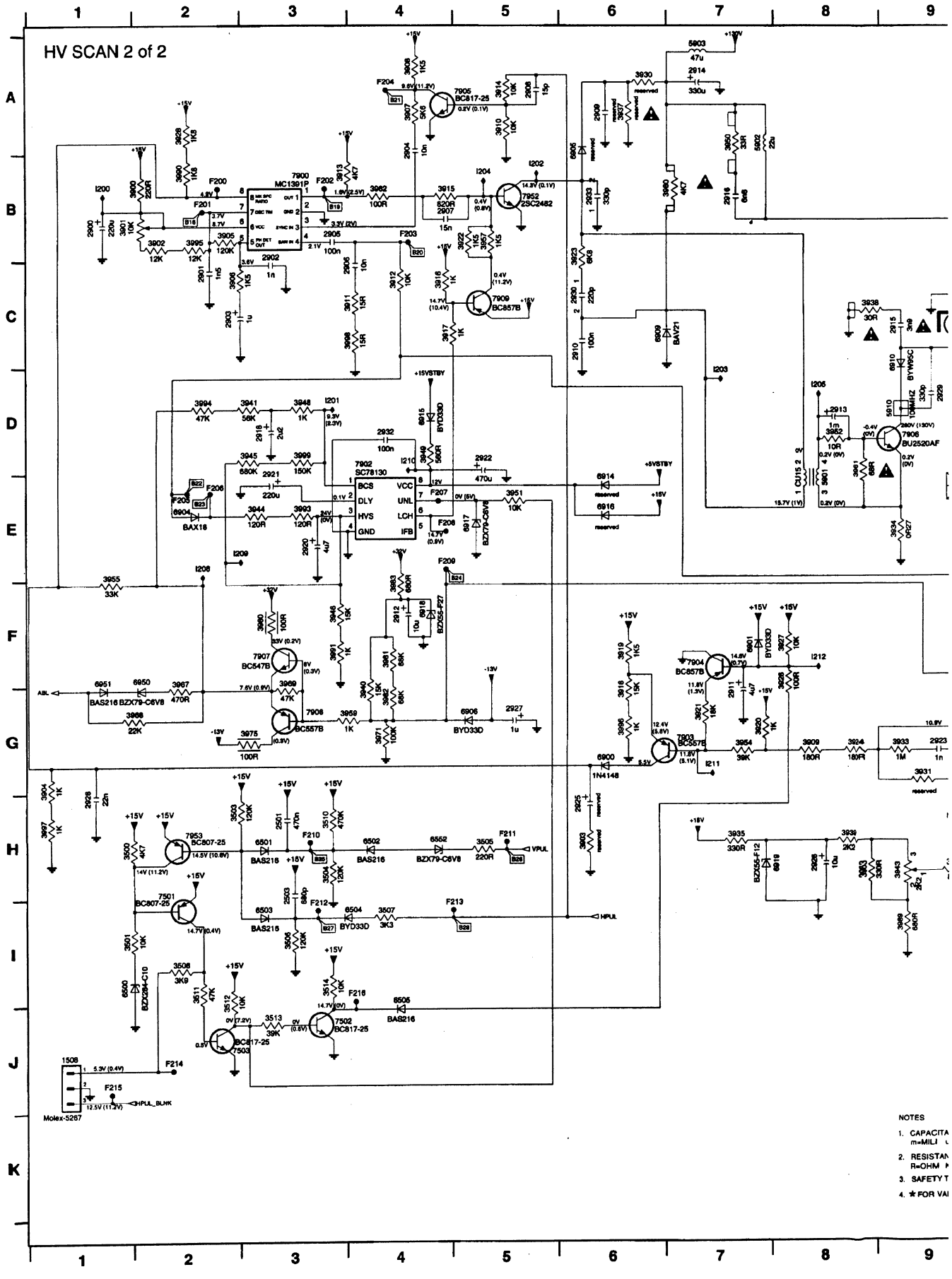
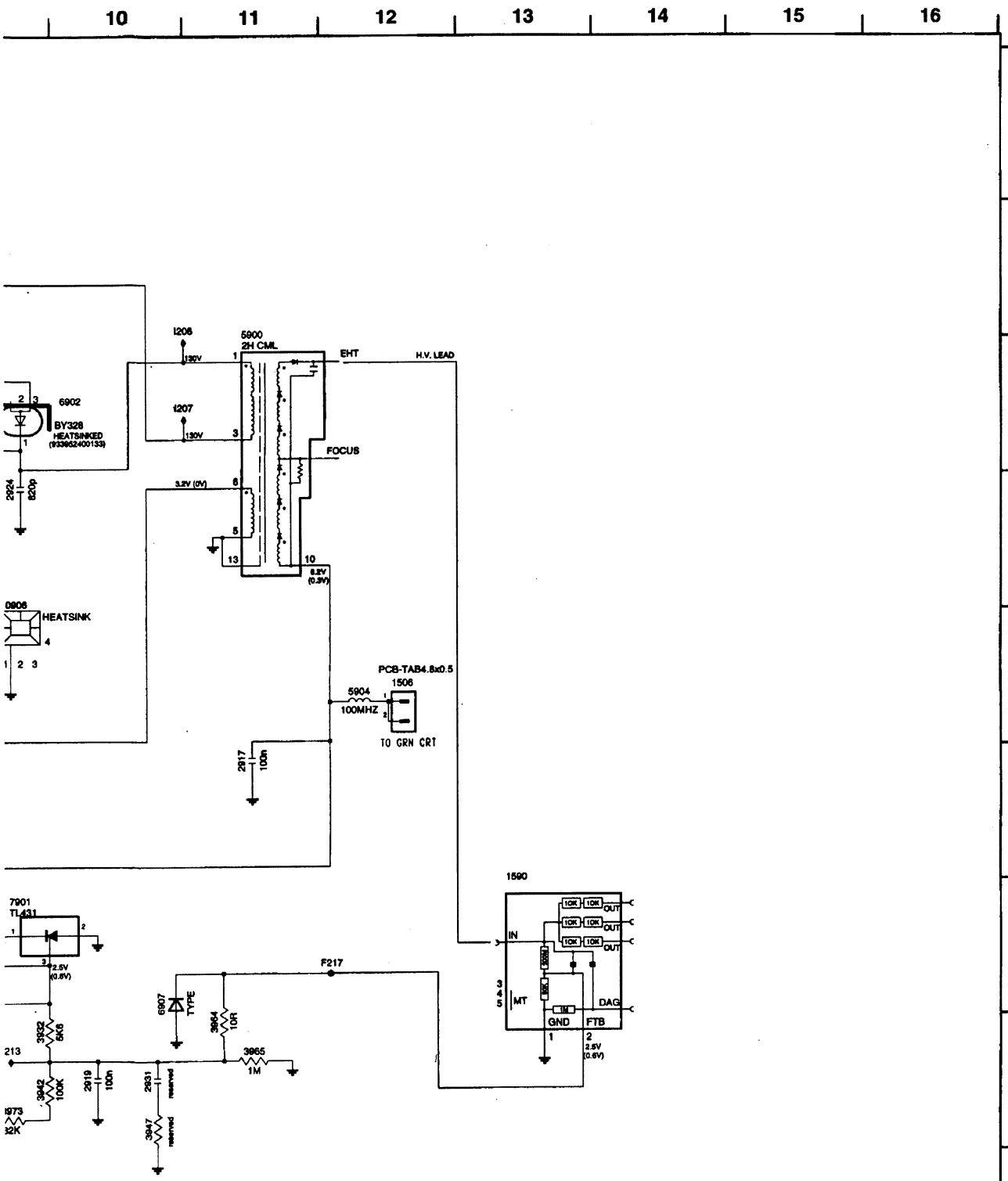
I102 B11
I103 B12
I104 C12
I105 C11
I106 D11
I107 D12
I108 D12
I109 C13
I110 C13
I111 D13
I112 E13
I113 E13
I114 G4
I115 E9
I116 E9
I117 G9
I118 G15
I119 F14
I120 F14
I121 J7
I122 H15

HV SCAN


HV SCAN 2 of 2
1 2 3 4 5 6 7 8 9
A B C D E F G H I J K
MC1391P
SC78130
BCS
DLY
HVS
GND
VCC
UNL
LCH
IFB
+15V
+15VSTBY
+5VSTBY
+32V
-13V
BAX16
BAS216 BZX79-C6V8
BAS216
BZX79-C6V8
BZX55-F27
BYD33D
1N4148
BC547B
BC557B
BC807-25
BC817-25
BU2520AF
BV95C
BAV21
Molex-5267
HPUL_BLNK
VPUL
HPUL
NOTES
1. CAPACITA
m=MILI
2. RESISTAN
R=OHM
3. SAFETY T
4. ★FOR VA



NCE VALUES ARE IN FARADS:
=MICRO n=NANO p=PICO f=FEMTO

ICE VALUES ARE IN OHMS:
=KILO M=MEGA G=GIGA T=TERA

RIANGE REPRESENTS PCIEC REPLACEMENT PART ONLY.

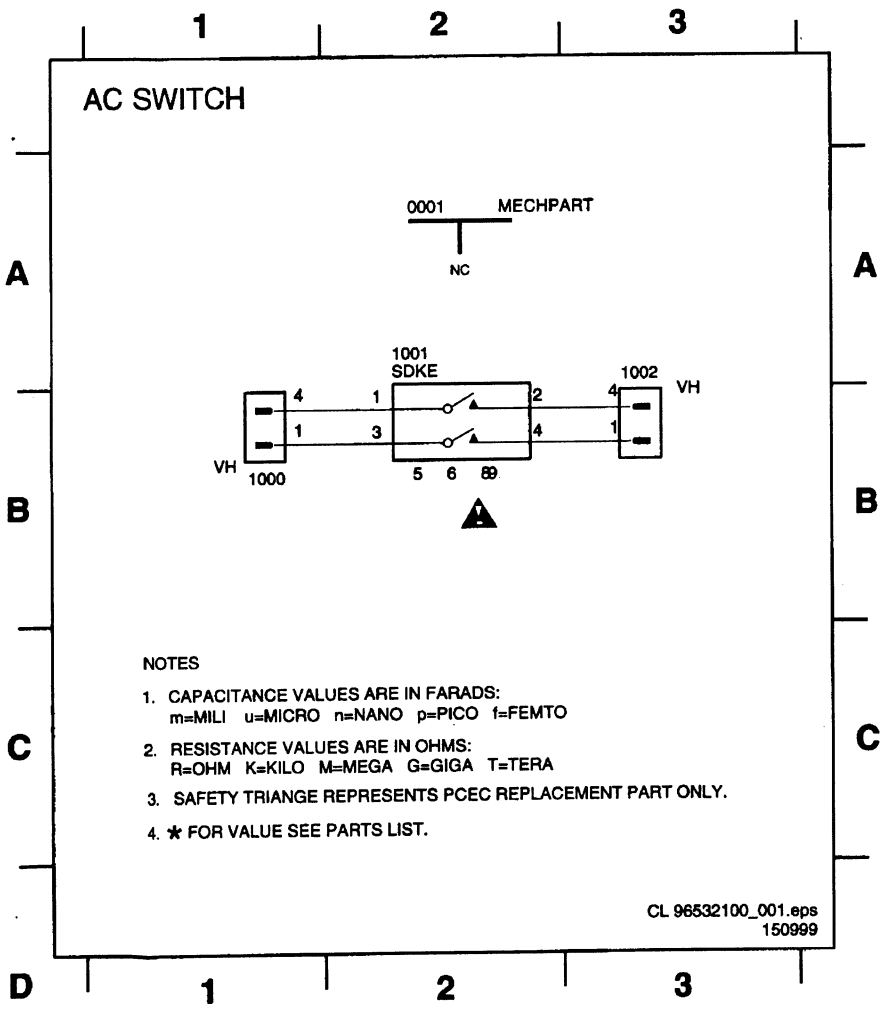
.UE SEE PARTS LIST.

CL 96532100_011.eps
150999

0906 D9
1506 E12
1508 J1
1590 G13
2501 H3
2503 H3
2900 B1
2901 C2
2902 B3
2903 C2
2904 A4
2905 B3
2906 C4
2907 B4
2908 A5
2909 A6
2910 C6
2911 G7
2912 F4
2913 D6
2914 A7
2915 C9
2916 B7
2917 F11
2918 D3
2919 H10
2920 E3
2921 E3
2922 D5
2923 G9
2924 D9
2925 H6
2926 H6
2927 G5
2928 H1
2929 D9
2930 C6
2931 H10
2932 D4
2933 B6
3500 H1
3501 I1
3503 H2
3504 H3
3505 H5
3506 I3
3507 I4
3508 I2
3510 H3
3511 I2
3512 I2
3513 J3
3514 I3
3900 B2
3901 B1
3902 B2
3903 H6
3904 G1
3905 B2
3906 C2
3907 A4
3908 A4
3909 G8
3910 A5
3911 C4
3912 C4
3913 B3
3914 A5
3915 B4
3916 C4
3917 C4
3918 G6
3919 F6
3920 G7
3921 G7
3922 B5
3923 B6
3924 G8
3926 F6
3927 F8
3928 A2
3930 A6
3931 G9
3932 H9
3933 G9
3934 E9
3935 H7
3937 A6
3938 C8
3939 H8
3940 G4
3941 D3
3942 H9
3943 H9
3944 E3
3945 D3
3946 F3
3947 H10
3948 D3
3949 D4
3950 A7
3951 E5
3952 D8
3954 G7
3955 E1
3957 B5
3959 G4
3960 F3
3961 D8
3962 B4
3963 H8
3964 H11
3965 H11
3967 F2
3968 G2
3969 F3
3971 G4
3973 H9
3975 G3
3980 B7
3981 F4
3982 G4
3983 F4
3989 I9
3990 B2
3991 F3
3993 E3
3994 D2
3995 B2
3996 G6
3997 H1
3998 C4
3999 D3
5900 C11
5901 E8
5902 A7
5903 A7
5904 E12
5910 D9
6500 I1
6501 H3
6502 H4
6503 I3
6504 I4
6505 I4
6552 H4
6900 G6
6901 F7
6902 C10
6904 E2
6905 A6
6906 G5
6907 G10
6909 C6
6910 C9
6914 E6
6915 D4
6916 E6
6917 E5
6918 F4
6919 H8
6950 F2
6951 F1
7501 H2
7502 J3
7503 J2
7900 B3
7901 G9
7902 D4
7903 G7
7904 F7
7905 A5
7906 D9
7907 F3
7908 G3
7909 C5
7952 B5
7953 H2
F200 B2
F201 B2
F202 B3
F203 B4
F204 A4
F205 E2
F206 E2
F207 E4
F208 E4
F209 E4
F210 H3
F211 H5
F212 I3
F213 I5
F214 J2
F215 J1
F216 I4
F217 G12
I200 B1
I201 D3
I202 B5
I203 D7
I204 B5
I205 D8
I206 B11
I207 C11
I208 E2
I209 E3
I210 D4
I211 G7
I212 F8
I213 H9

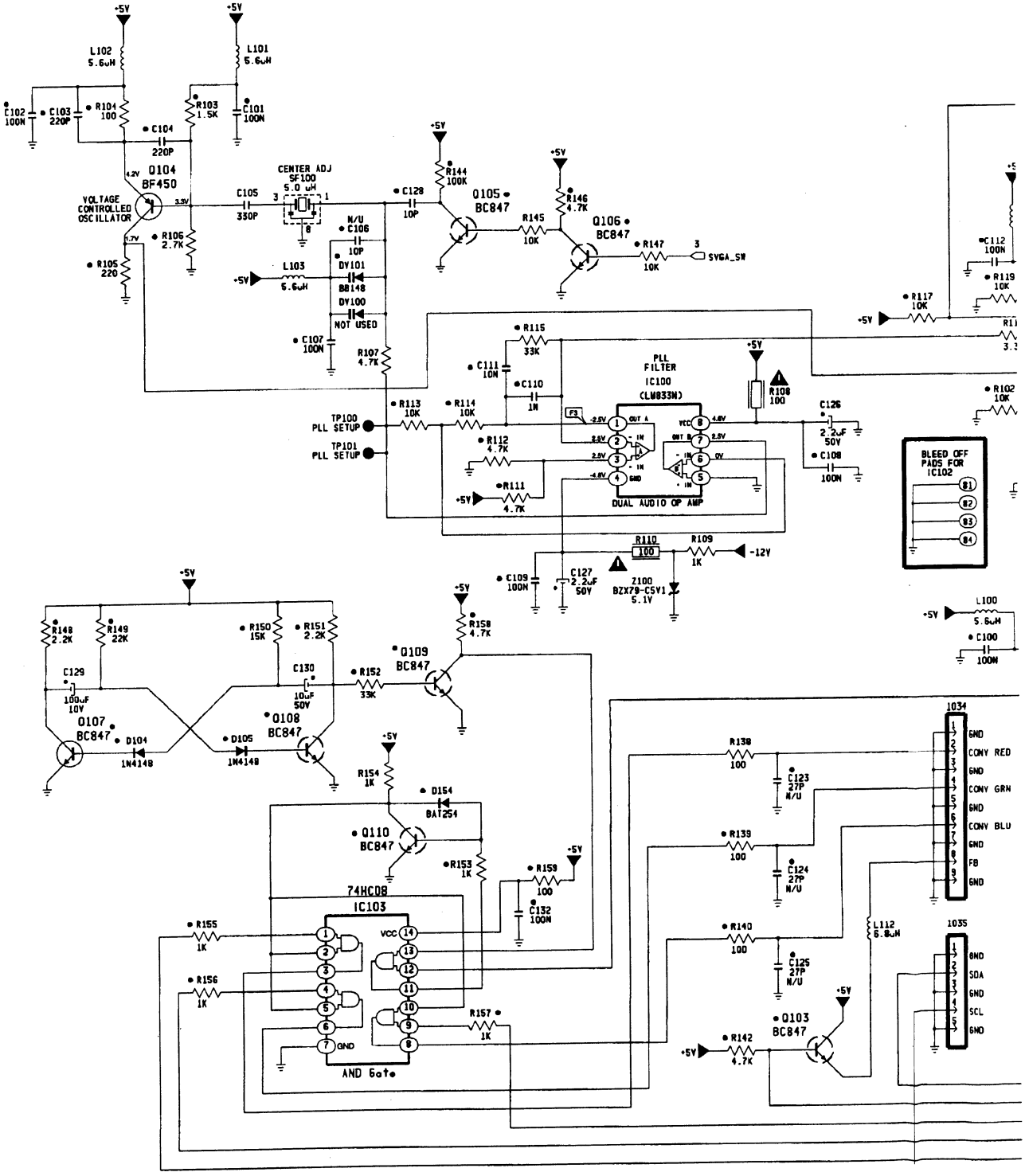
Mains switch panel

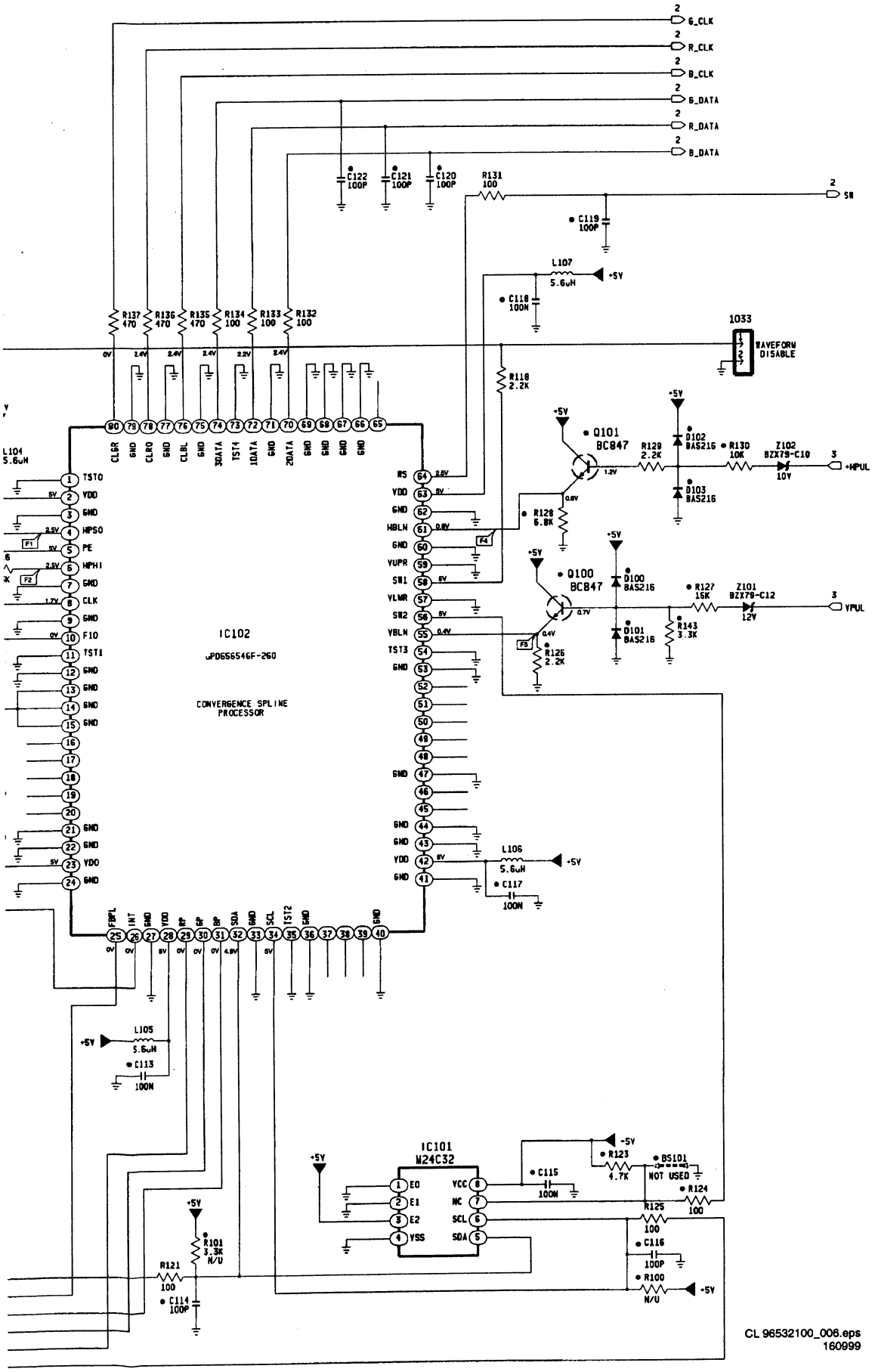
0001 A2
1000 B1
1001 A2
1002 A3



Convergence panel

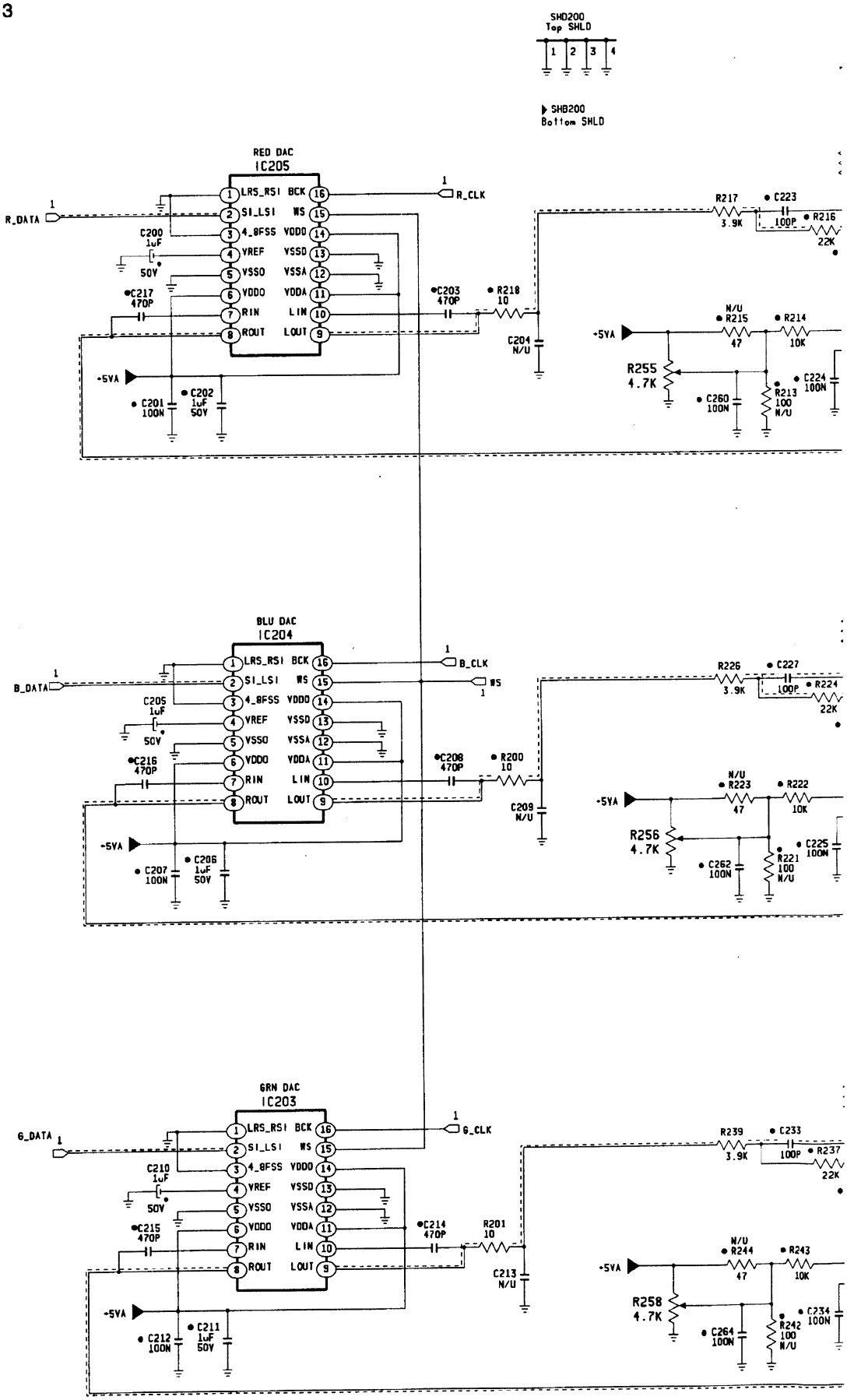
CONVERGENCE 1 of 3

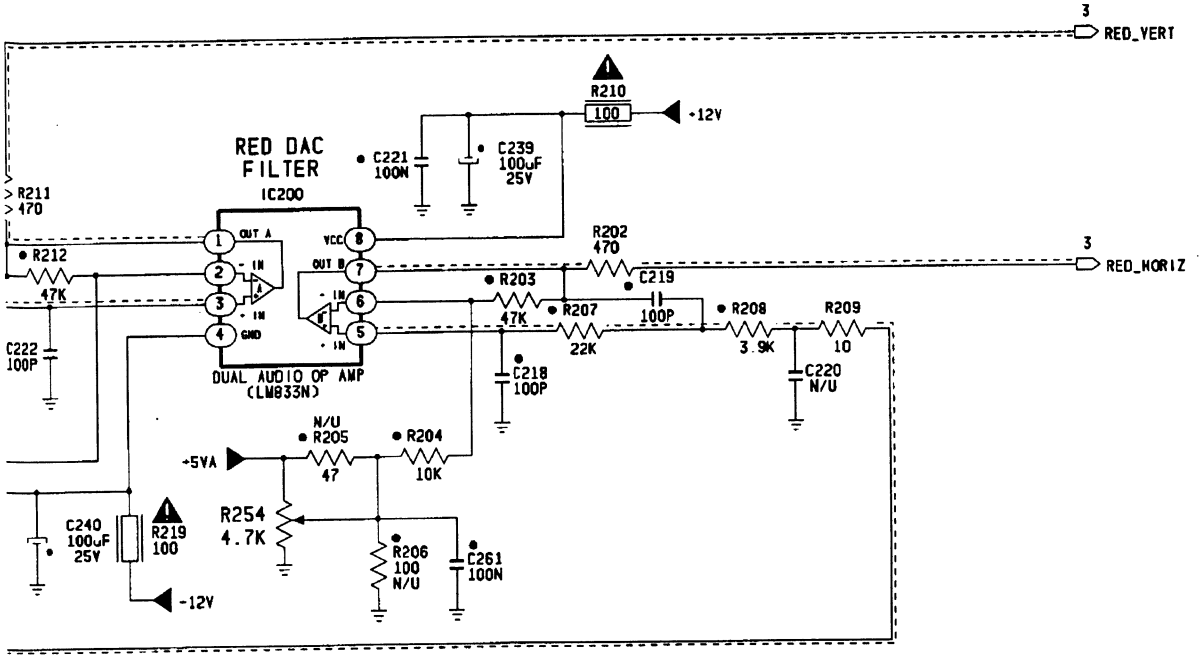


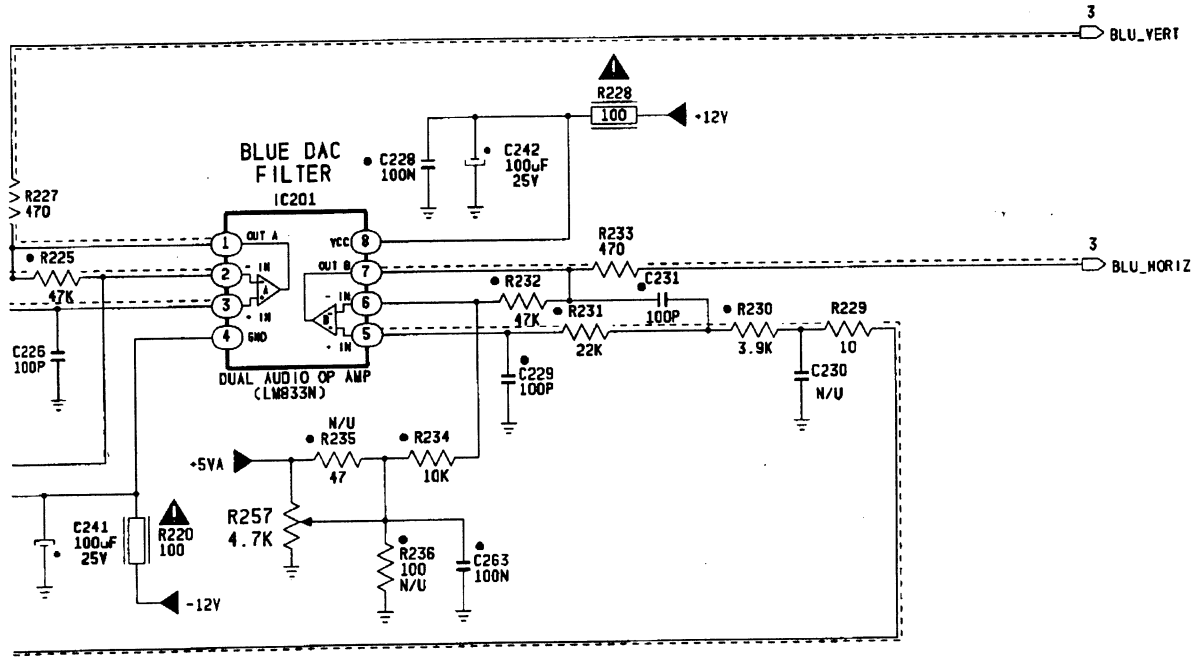

G_CLK
R_CLK
B_CLK
G_DATA
R_DATA
B_DATA
SW
C122 100P
C121 100P
C120 100P
R131 100
C119 100P
L107 5.6uH
+5V
C118 100N
1033
WAVEFORM DISABLE
R137 470
R136 470
R135 470
R134 100
R133 100
R132 100
R118 2.2K
L104 5.6uH
IC102
uPD6566546F-260
CONVERGENCE SPLINE PROCESSOR
Q101 BC847
R129 2.2K
D102 BAS216
R130 10K
Z102 BZX79-C10
10V
+HPUL
D103 BAS216
R128 6.8K
Q100 BC847
D100 BAS216
R127 15K
Z101 BZX79-C12
12V
+VPUL
D101 BAS216
R143 3.3K
R126 2.2K
L106 5.6uH
C117 100N
L105 5.6uH
C113 100N
IC101 M24C32
C115 100N
R123 4.7K
BS101 NOT USED
R124 100
R125 100
C116 100P
R100 N/U
R101 3.3K N/U
R121 100
C114 100P
CL 96532100_006.eps
160999

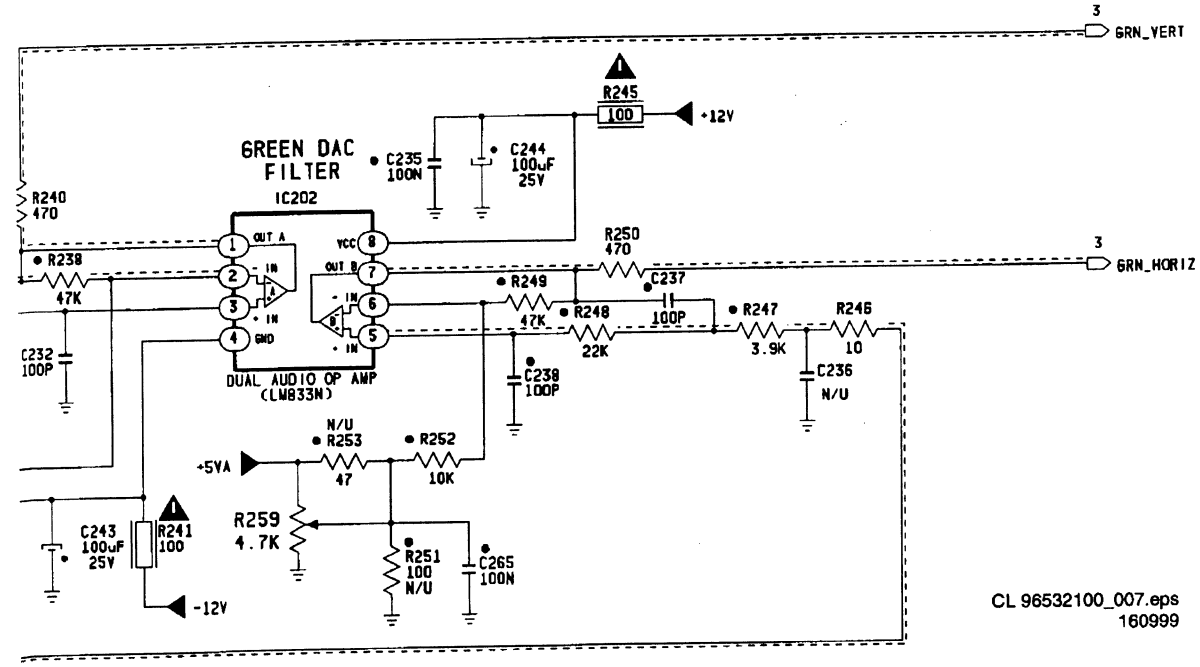
Convergence panel

CONVERGENCE 2 of 3





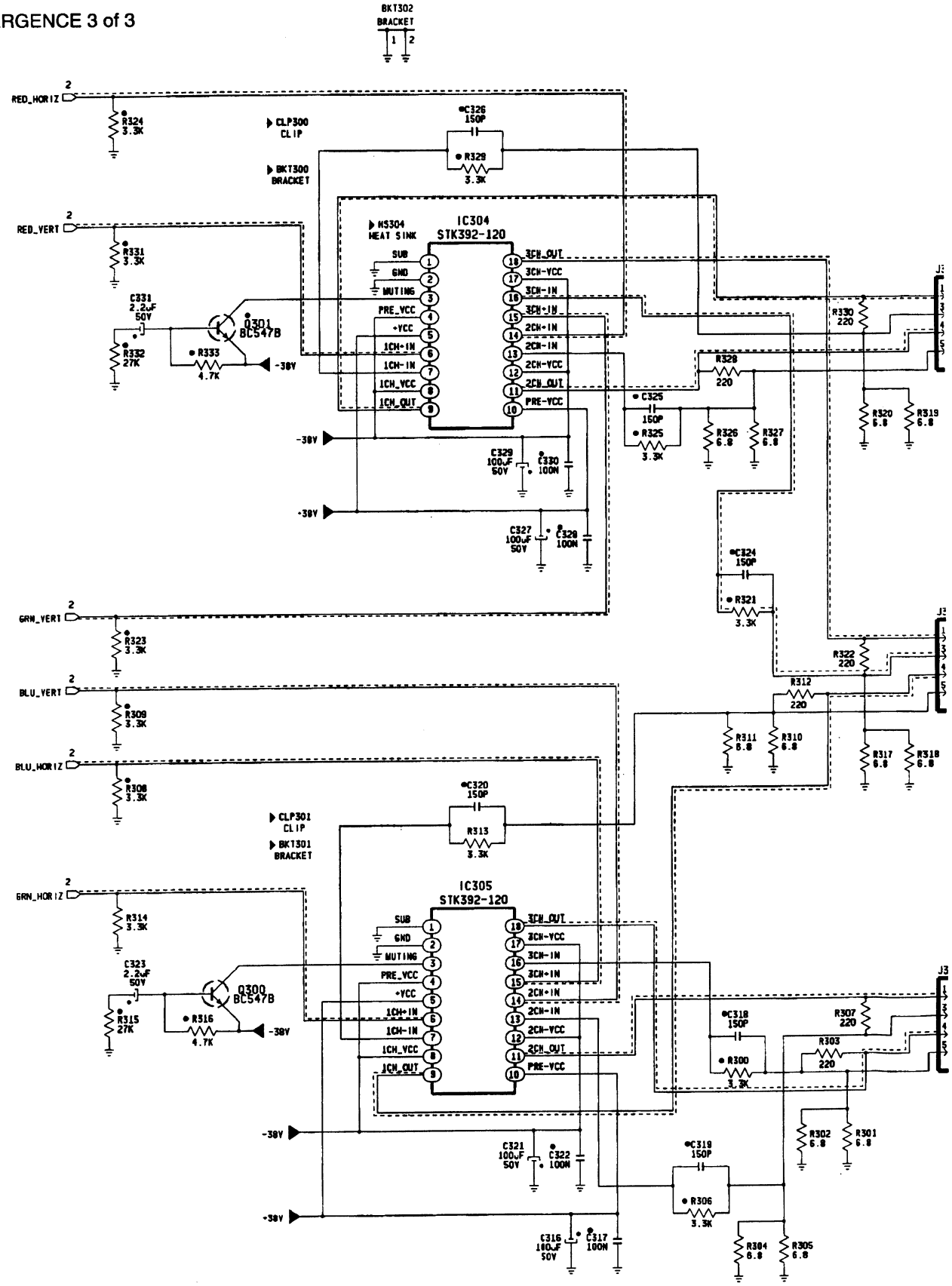


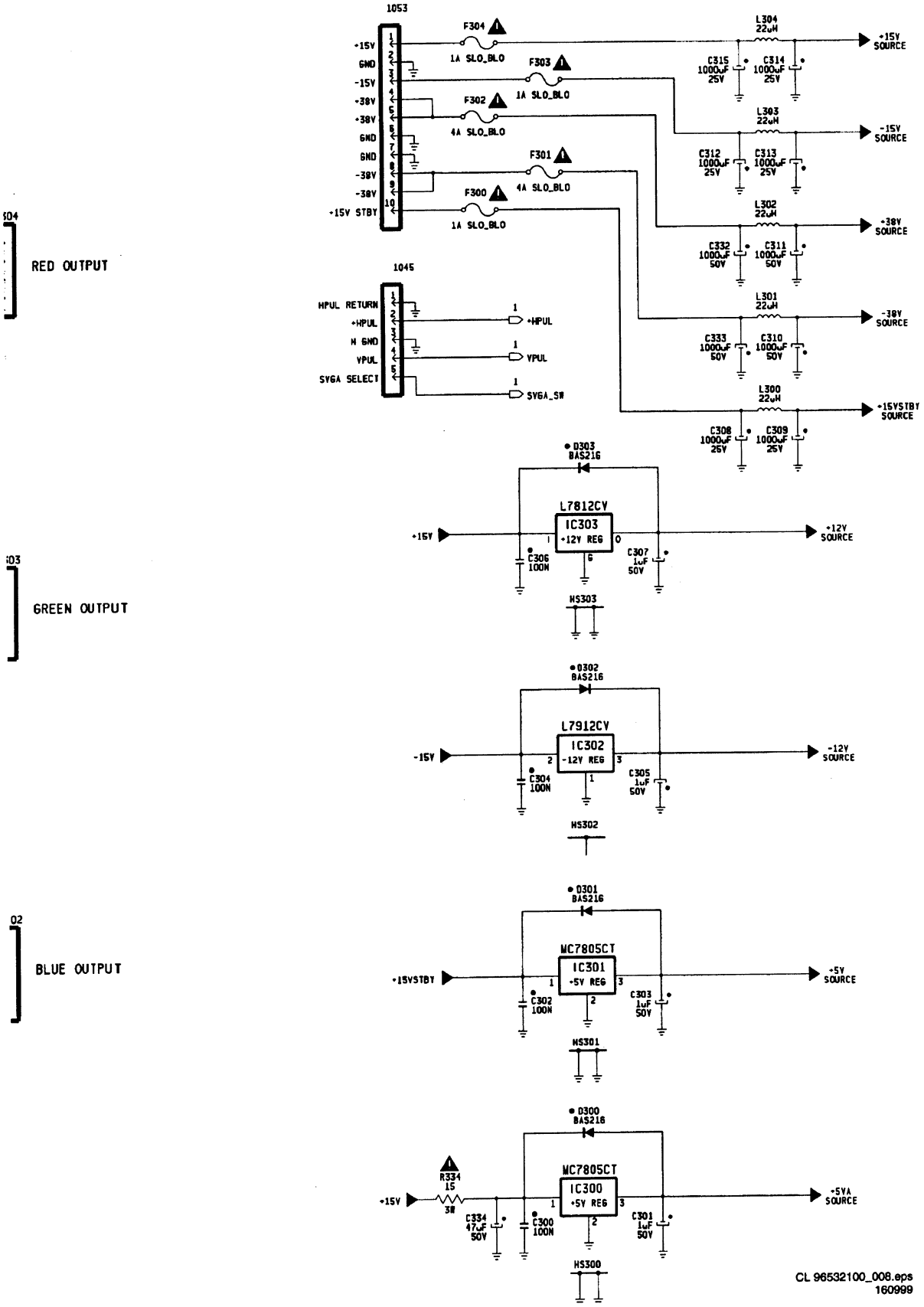


CL 96532100_007.eps
160999

Convergence panel

CONVERGENCE 3 of 3





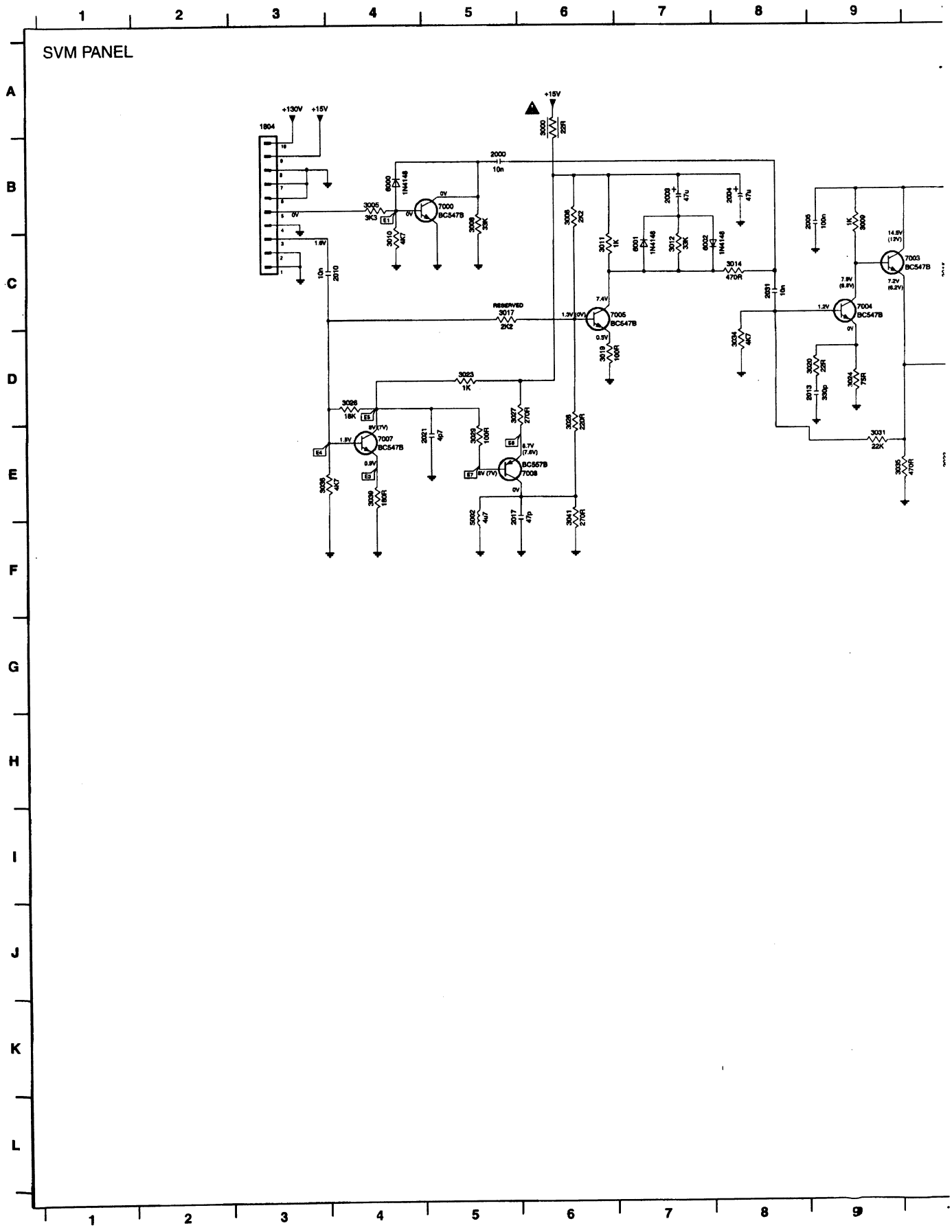
RED OUTPUT

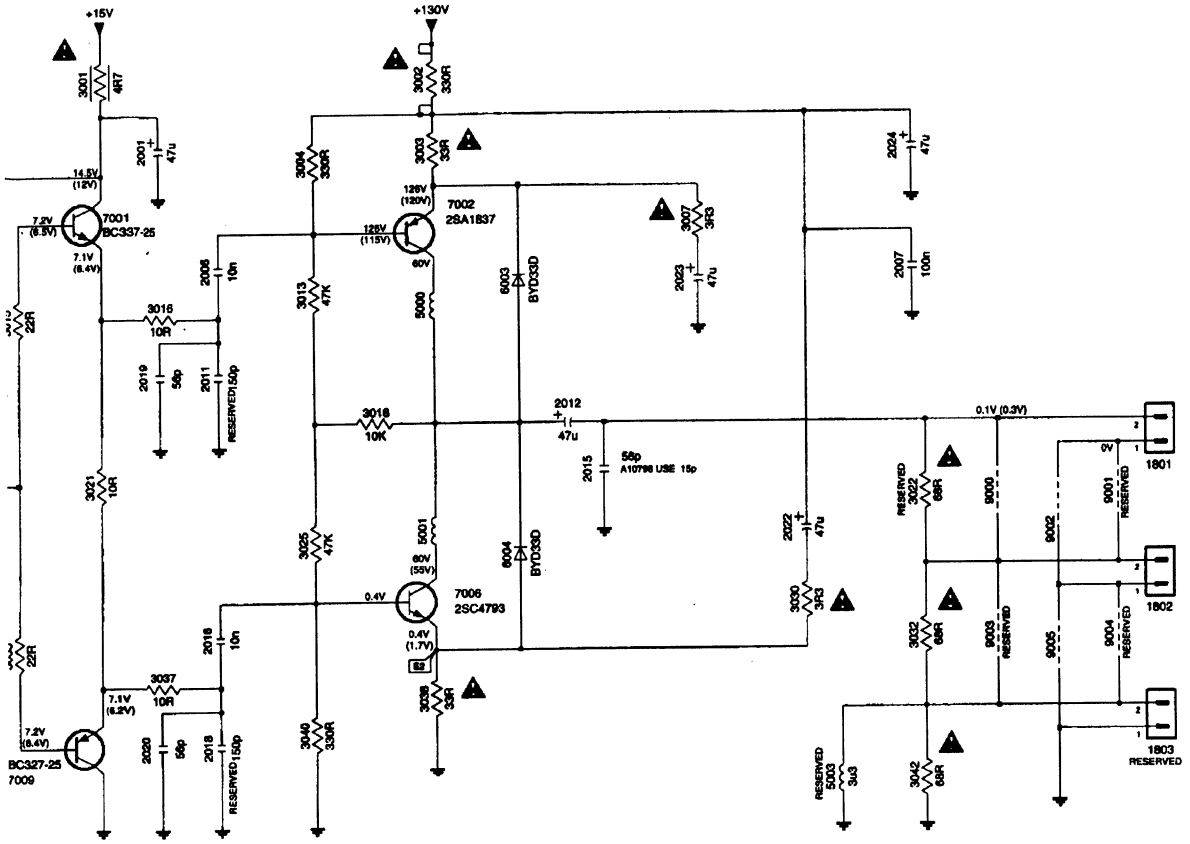
GREEN OUTPUT

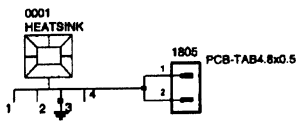
BLUE OUTPUT

CL 96532100_008.eps
160999

SVM PANEL


SVM PANEL
1 2 3 4 5 6 7 8 9
A B C D E F G H I J K L
+130V
+15V
1804
3000 22R
2000 10n
6000 1N4148
7000 BC547B
3005 3K3
3008 33K
3010 4K7
3008 2K2
3011 1K
6001 1N4148
3012 33K
6002 1N4148
2003 47u
2004 47u
3014 470R
2005 100n
3009 1K
7003 BC547B
2031 10n
7004 BC547B
3024 4K7
3020 22R
2013 330p
3034 75R
3031 22K
3035 470R
2010 10n
RESERVED 3017 2K2
7005 BC547B
3019 100R
3023 1K
3026 18K
7007 BC547B
2021 4n7
3029 100R
3027 270R
7008 BC557B
3028 22R
3036 4K7
3039 180R
5002 4u7
2017 47p
3041 270R





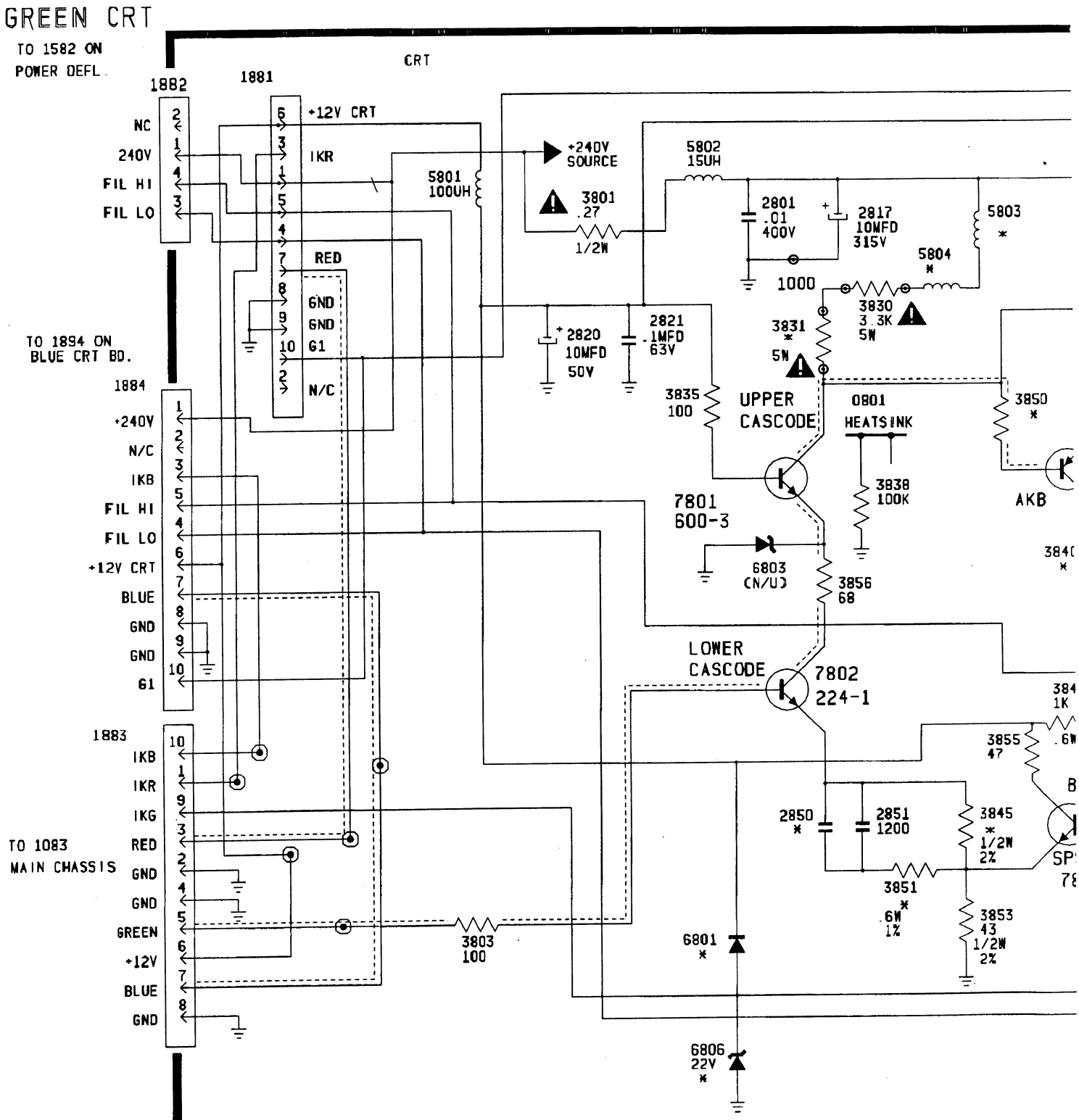
NOTES

1. CAPACITANCE VALUES ARE IN FARADS:
   m=MILI u=MICRO n=NANO p=PICO f=FEMTO
2. RESISTANCE VALUES ARE IN OHMS:
   R=OHM K=KILO M=MEGA G=GIGA T=TERA
3. SAFETY TRIANGE REPRESENTS PCEC REPLACEMENT PART ONLY.
4. ★ FOR VALUE SEE PARTS LIST.

CL 96532100_018.eps
150999

0001 H14
1801 D17
1802 E17
1803 F17
1804 A3
1805 H14
2000 B5
2001 B11
2003 B7
2004 B8
2005 B9
2006 C11
2007 C15
2010 C4
2011 C11
2012 C13
2013 D9
2015 D14
2016 E11
2017 E5
2018 E11
2019 C11
2020 F11
2021 E5
2022 D15
2023 C14
2024 B15
2031 C8
3000 A6
3001 B10
3002 A12
3003 B12
3004 B12
3005 B4
3006 B6
3007 B14
3008 B5
3009 B9
3010 C4
3011 C6
3012 C7
3013 C12
3014 C8
3015 C10
3016 C11
3017 C5
3018 D12
3019 D8
3020 D9
3021 D10
3022 D15
3023 D5
3024 D9
3025 D12
3026 D4
3027 D5
3028 E6
3029 E5
3030 E15
3031 E9
3032 E15
3033 E10
3034 D8
3035 E9
3036 E3
3037 E11
3038 E12
3039 E4
3040 E12
3041 F8
3042 F15
5000 C12
5001 D12
5002 E5
5003 F15
6000 B4
6001 C7
6002 C7
6003 C13
6004 D13
7000 B5
7001 B11
7002 B13
7003 C10
7004 C9
7005 C6
7006 E13
7007 E4
7008 E6
7009 F10
9000 D16
9001 D17
9002 D16
9003 E16
9004 E17
9005 E16

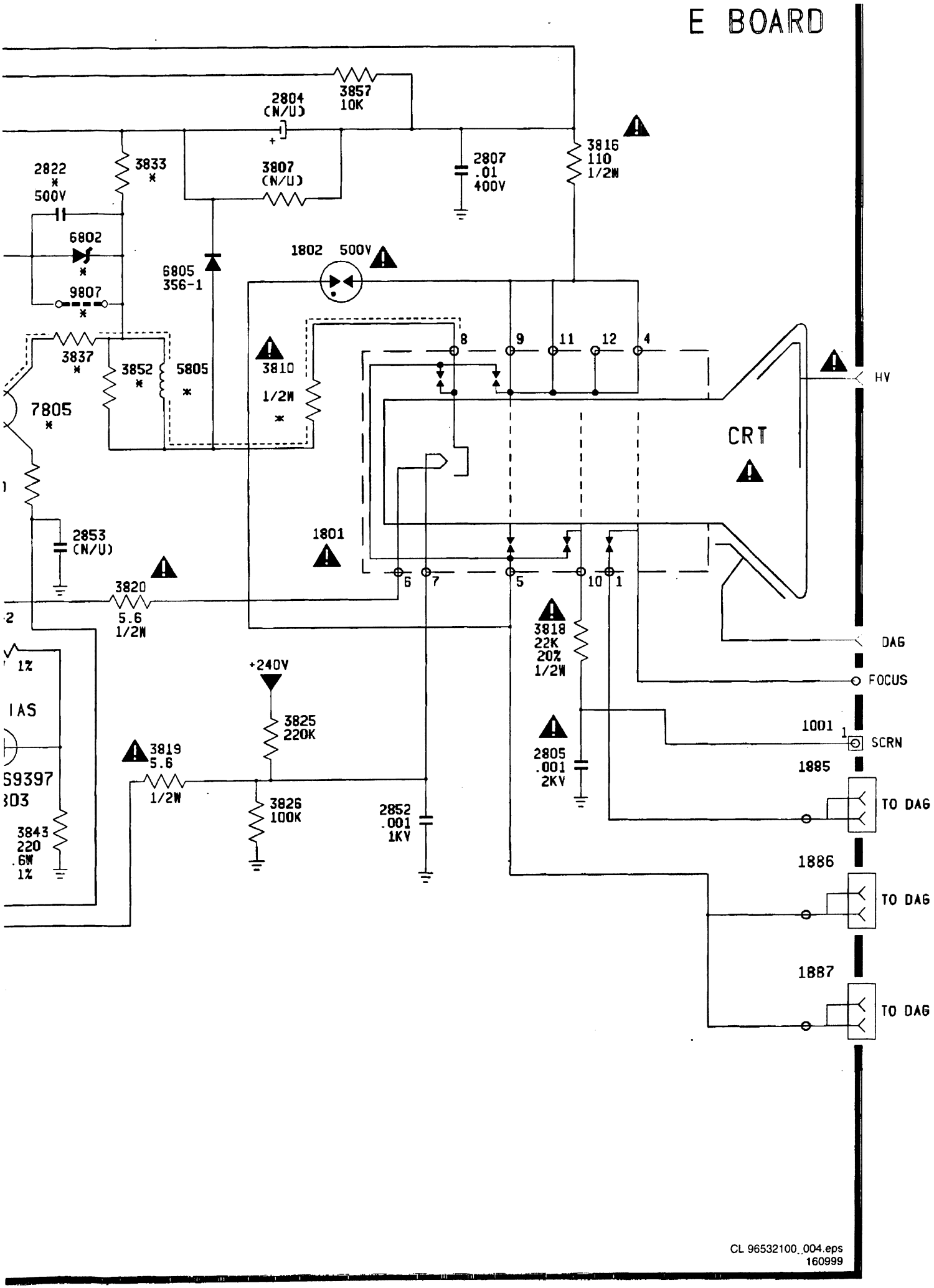
CRT GREEN panel



NOTES:

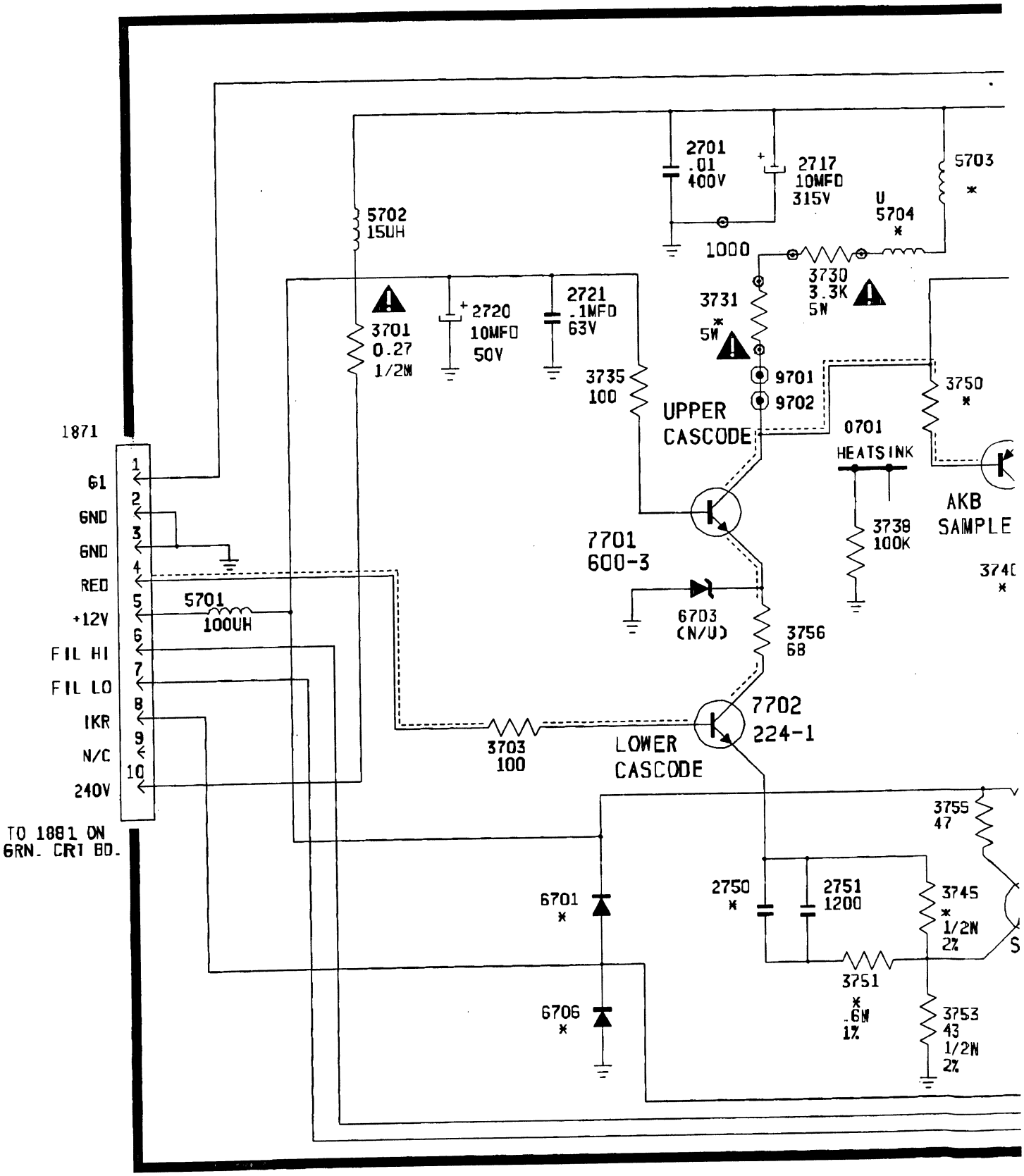
UNLESS OTHERWISE SPECIFIED

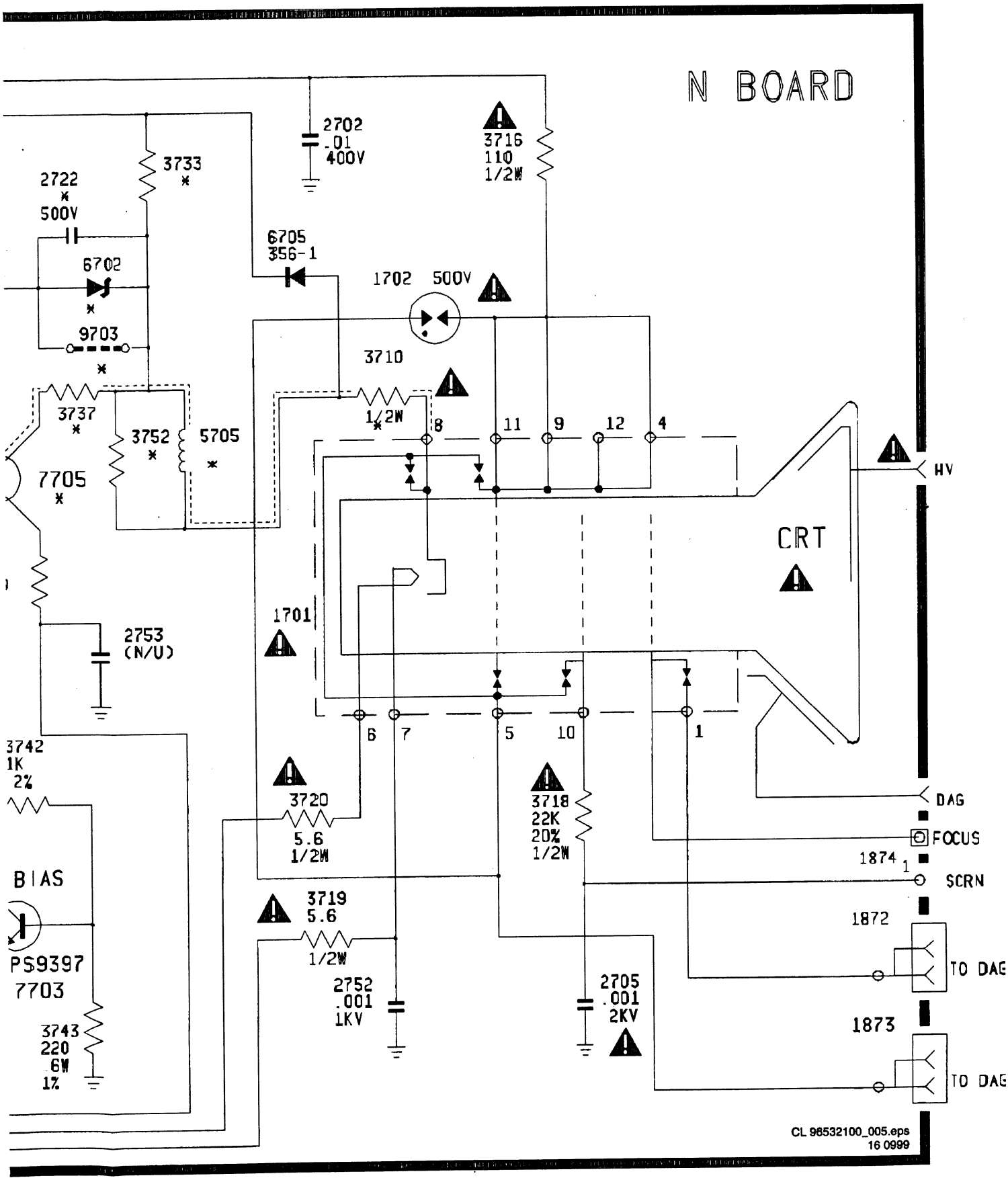
1. CAPACITANCE VALUES OF ONE OR MORE ARE PICOFARADS.
2. CAPACITANCE VALUES LESS THAN ONE ARE MICROFARADS.
3. RESISTORS ARE IN OHMS, 1/4W, 5%.
4. ● = SURFACE MOUNTED DEVICE (SMD).
5. ⚠ = PCEC REPLACEMENT PART NUMBERS ONLY.
6. ⊙ = LAYOUT INDUCED JUMPER.
7. * = SEE PARTS LIST.


E BOARD
2804 (N/U)
3857 10K
3816 110 1/2W
2807 .01 400V
2822 * 500V
3833 *
3807 (N/U)
6802 *
9807 *
6805 356-1
1802 500V
3837 *
3852 *
5805 *
7805 *
3810 1/2W *
8
9
11
12
4
HV
CRT
2853 (N/U)
1801
3820 5.6 1/2W
6
7
5
10
1
3818 22K 20% 1/2W
DAG
FOCUS
1001
1
SCRN
2805 .001 2KV
1885
TO DAG
+240V
3825 220K
3819 5.6 1/2W
3826 100K
2852 .001 1KV
1886
TO DAG
1887
TO DAG
1%
IAS
59397
303
3843 220 .6W 1%
CL 96532100_004.eps
160999

CRT RED panel

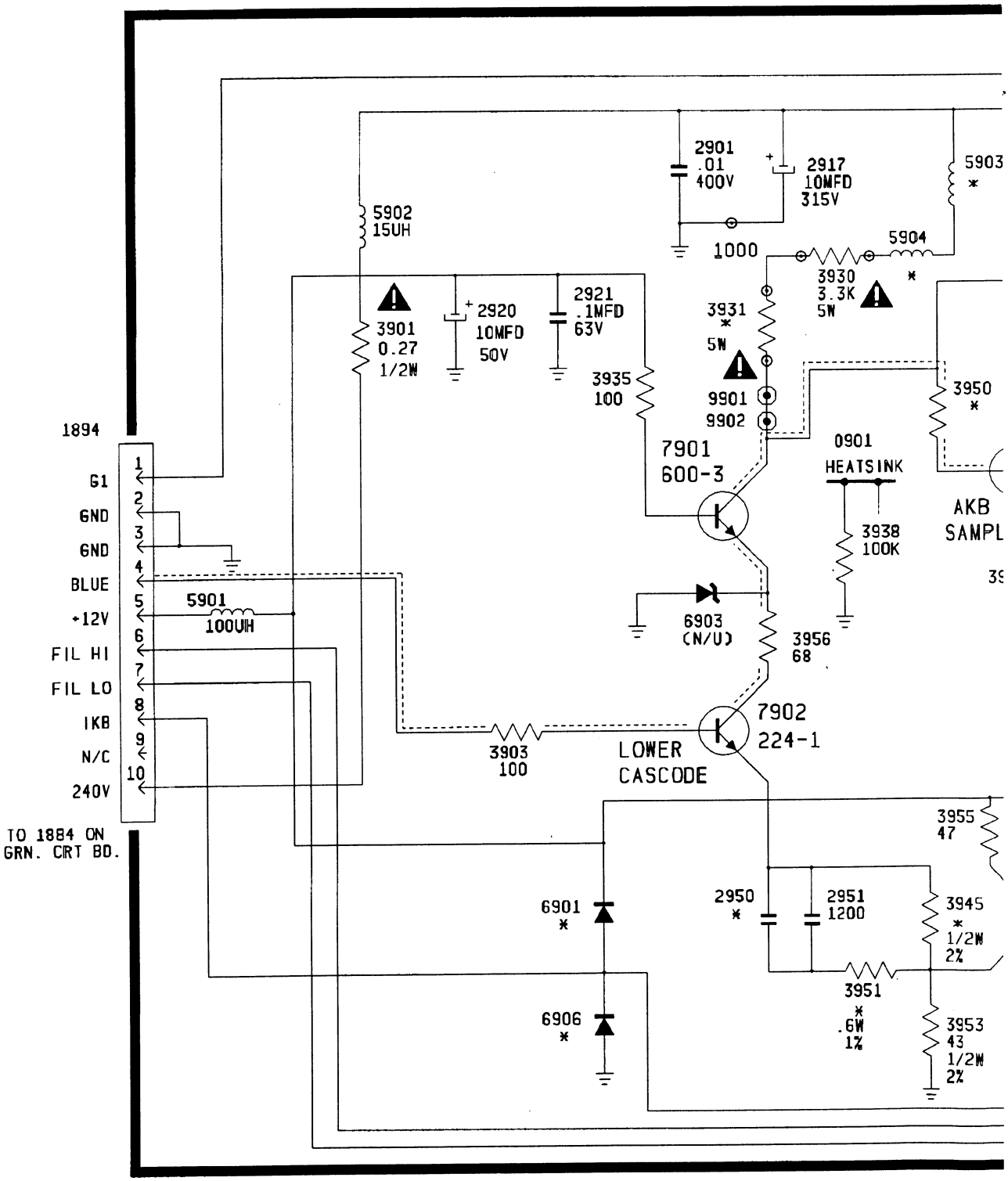
RED CRT

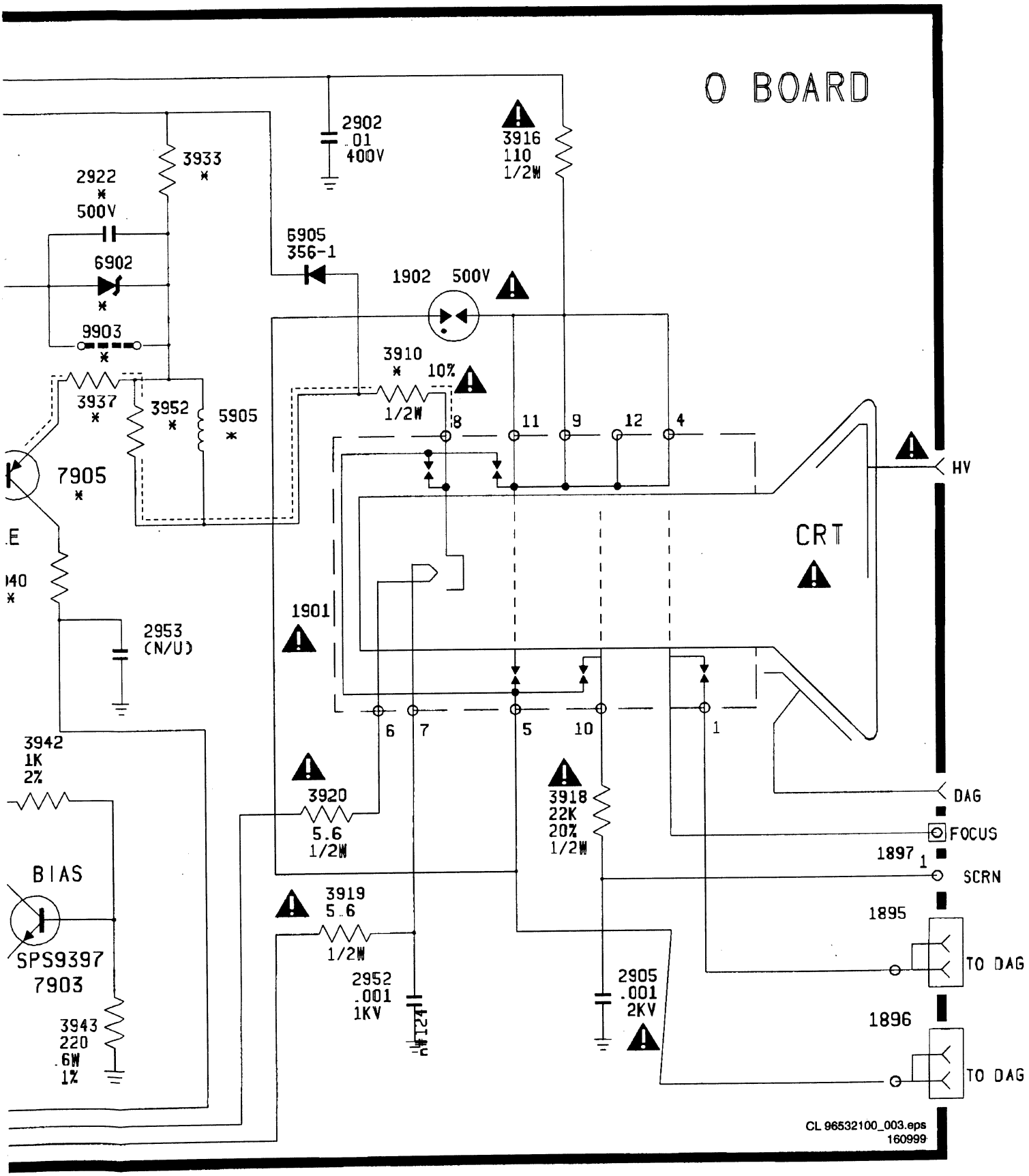



N BOARD
2702
.01
400V
3716
110
1/2W
3733
2722
500V
6705
356-1
6702
1702 500V
9703
3710
3737
1/2W
3752
5705
7705
8
11
9
12
4
HV
CRT
1701
2753
(N/U)
6
7
5
10
1
3742
1K
2%
3720
5.6
1/2W
3718
22K
20%
1/2W
DAG
FOCUS
1874
1
SCRN
BIAS
3719
5.6
1/2W
1872
TO DAG
PS9397
7703
2752
.001
1KV
2705
.001
2KV
1873
TO DAG
3743
220
.6W
1%
CL 96532100_005.eps
16 0999

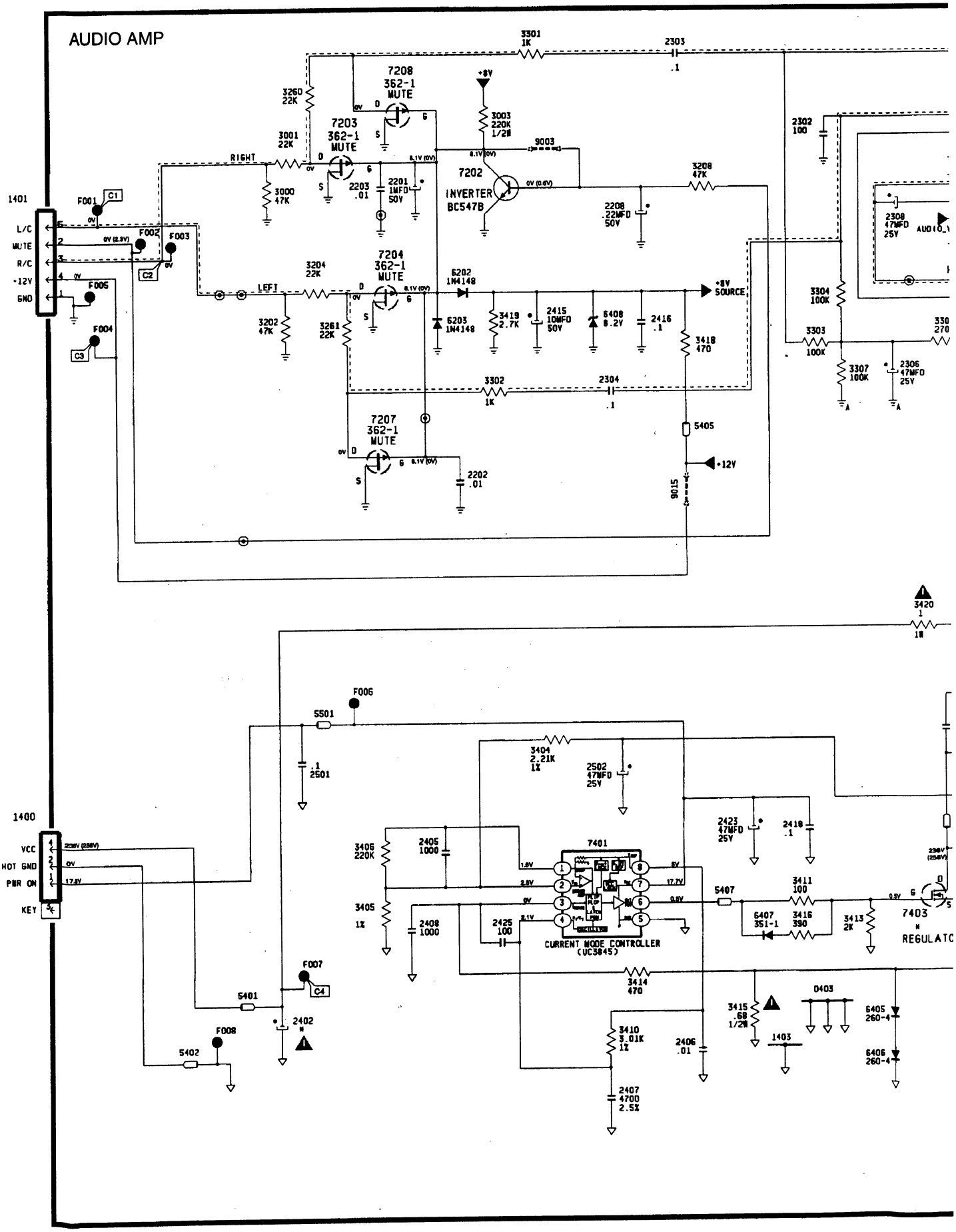
CRT BLUE panel

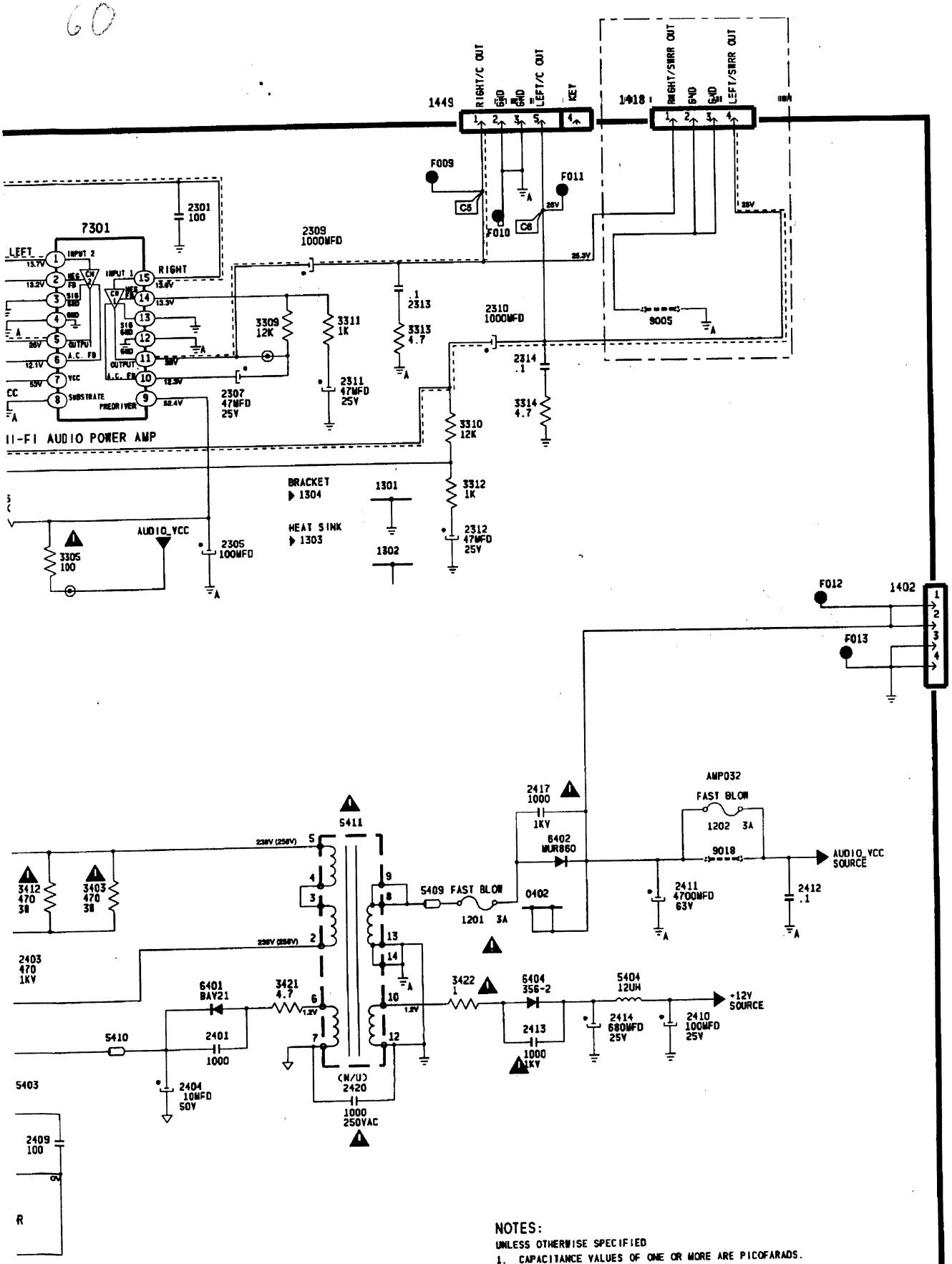
BLUE CRT




O BOARD
2902
.01
400V
3916
110
1/2W
3933
2922
500V
6902
9903
6905
356-1
1902
500V
3910
10%
1/2W
3937
3952
5905
7905
8
11
9
12
4
HV
CRT
1901
2953
(N/U)
3942
1K
2%
6
7
5
10
1
3920
5.6
1/2W
3918
22K
20%
1/2W
DAG
FOCUS
1897
1
SCRN
BIAS
SPS9397
7903
3919
5.6
1/2W
1895
TO DAG
2952
.001
1KV
2905
.001
2KV
1896
TO DAG
3943
220
.6W
1%
CL 96532100_003.eps
160999

Audio amplifier





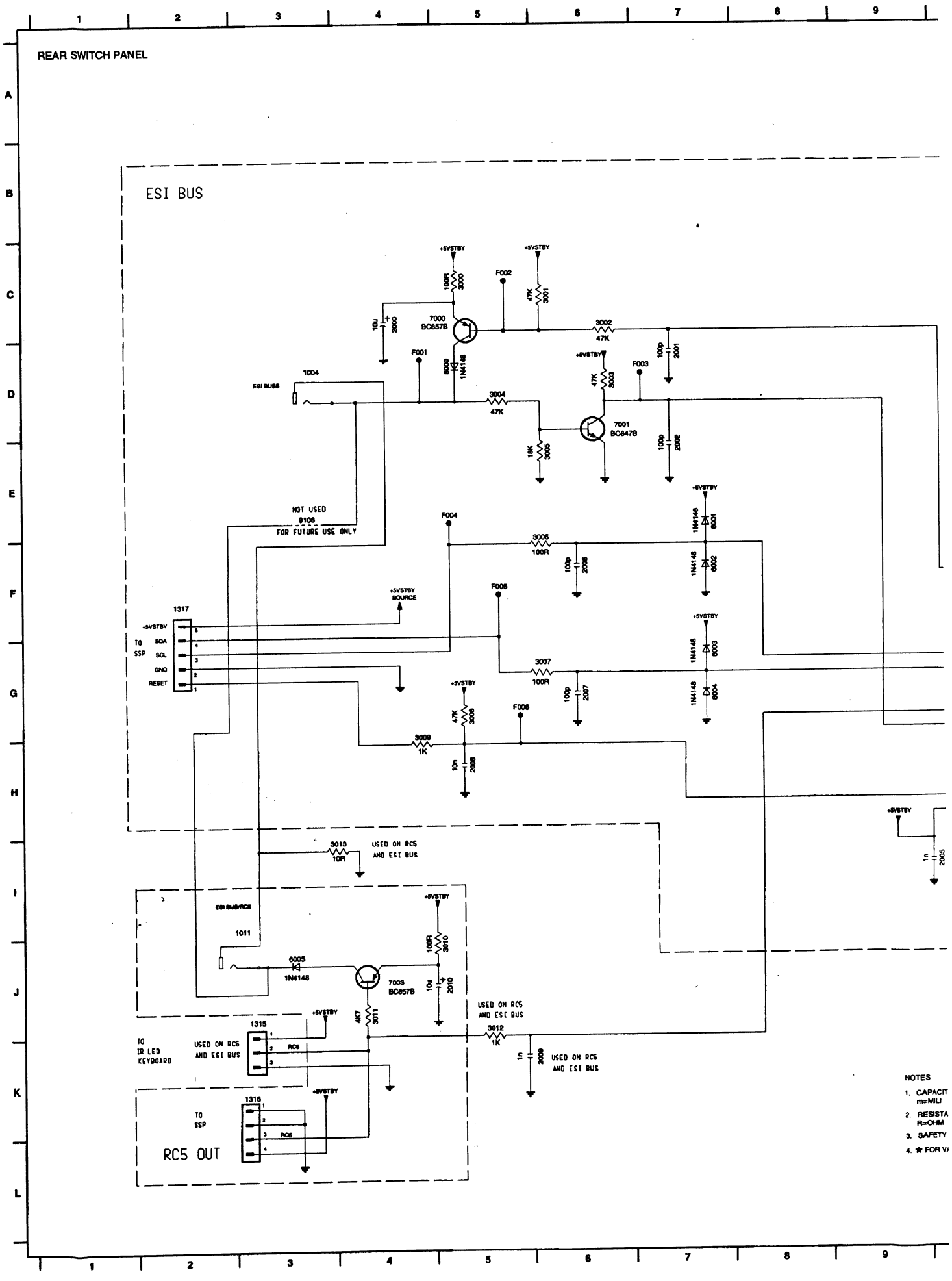
NOTES:

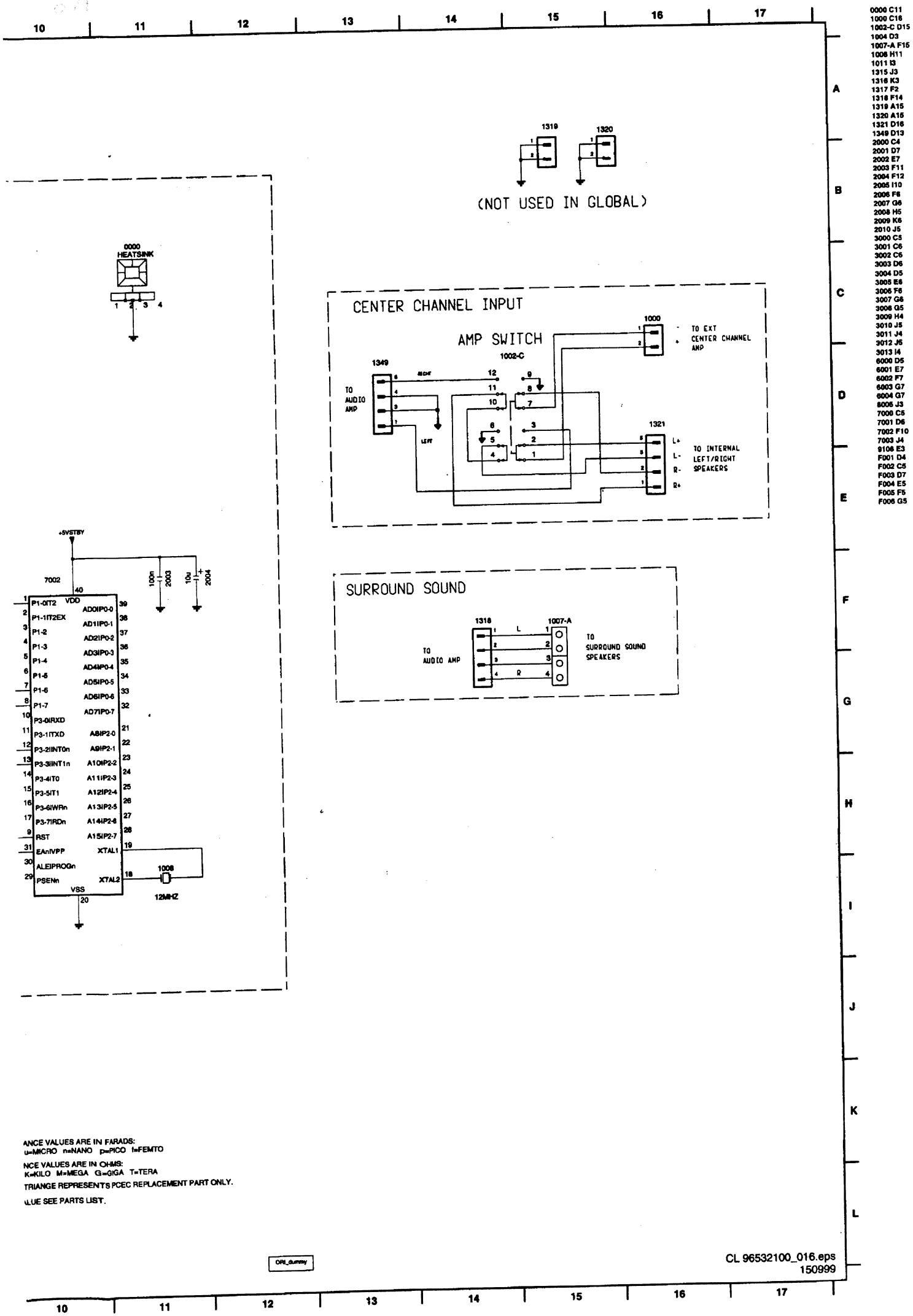
UNLESS OTHERWISE SPECIFIED

1. CAPACITANCE VALUES OF ONE OR MORE ARE PICOFARADS.
2. CAPACITANCE VALUES LESS THAN ONE ARE MICROFARADS.
3. RESISTORS ARE IN OHMS, 1/4W, 5%.
4. ● = SURFACE MOUNTED DEVICE (SMD).
5. ⚠ = PCEC REPLACEMENT PART NUMBERS ONLY.
6. ⊙ = LAYOUT INDUCED JUMPER.
7. # = SEE PARTS LIST.

CL 96532100_002.eps
160999

Rear switch panel





ANCE VALUES ARE IN FARADS:
u=MICRO n=NANO p=PICO f=FEMTO

NCE VALUES ARE IN OHMS:
K=KILO M=MEGA G=GIGA T=TERA

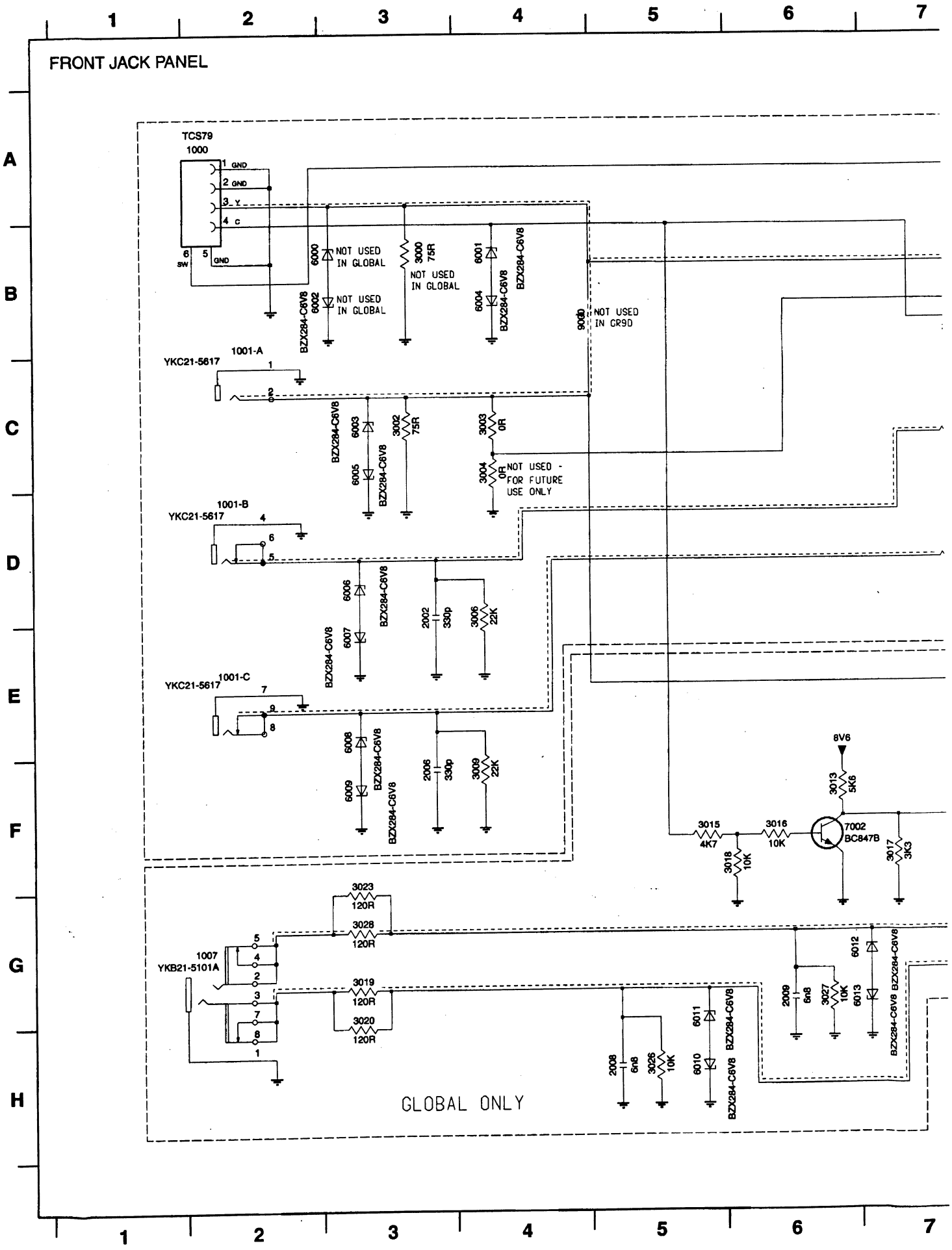
TRIANGE REPRESENTS PCEC REPLACEMENT PART ONLY.

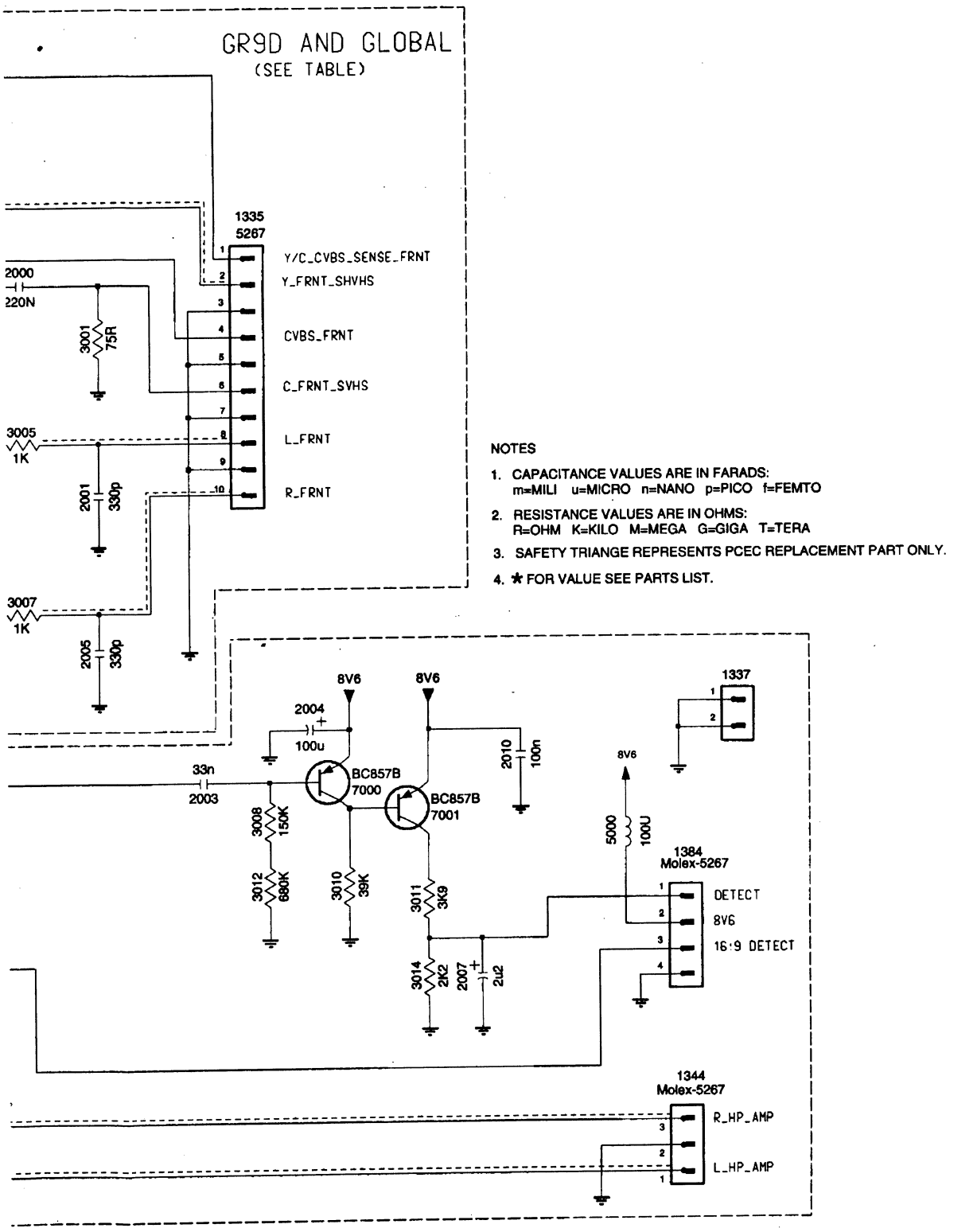
LUE SEE PARTS LIST.

ORI_dummy

CL 96532100_016.eps
150999

Front jack panel





NOTES

1. CAPACITANCE VALUES ARE IN FARADS:
   m=MILI u=MICRO n=NANO p=PICO f=FEMTO
2. RESISTANCE VALUES ARE IN OHMS:
   R=OHM K=KILO M=MEGA G=GIGA T=TERA
3. SAFETY TRIANGE REPRESENTS PCEC REPLACEMENT PART ONLY.
4. ★ FOR VALUE SEE PARTS LIST.

CL 96532100_017.eps
160999

1000 A2
1001-A B2
1001-B C2
1001-C D2
1002 C11
1005 E7
1006 F7
1007 F2
2000 B9
2001 C10
2002 D2
2003 D5
2004 D5
2005 D10
2006 E2
2007 E6
2008 G5
2009 G6
3000 B7
3001 C10
3002 C2
3003 C3
3004 C3
3005 C10
3006 D3
3007 D10
3008 D5
3009 E3
3010 E5
3011 E6
3012 E5
3013 E3
3014 E6
3015 E2
3016 E3
3017 F4
3018 F3
3019 F5
3020 F5
3023 G5
3026 G5
3027 G6
3028 G5
5000 F6
6000 B7
6001 B9
6002 B7
6003 C3
6004 C9
6005 C3
6006 C9
6007 D9
6008 D9
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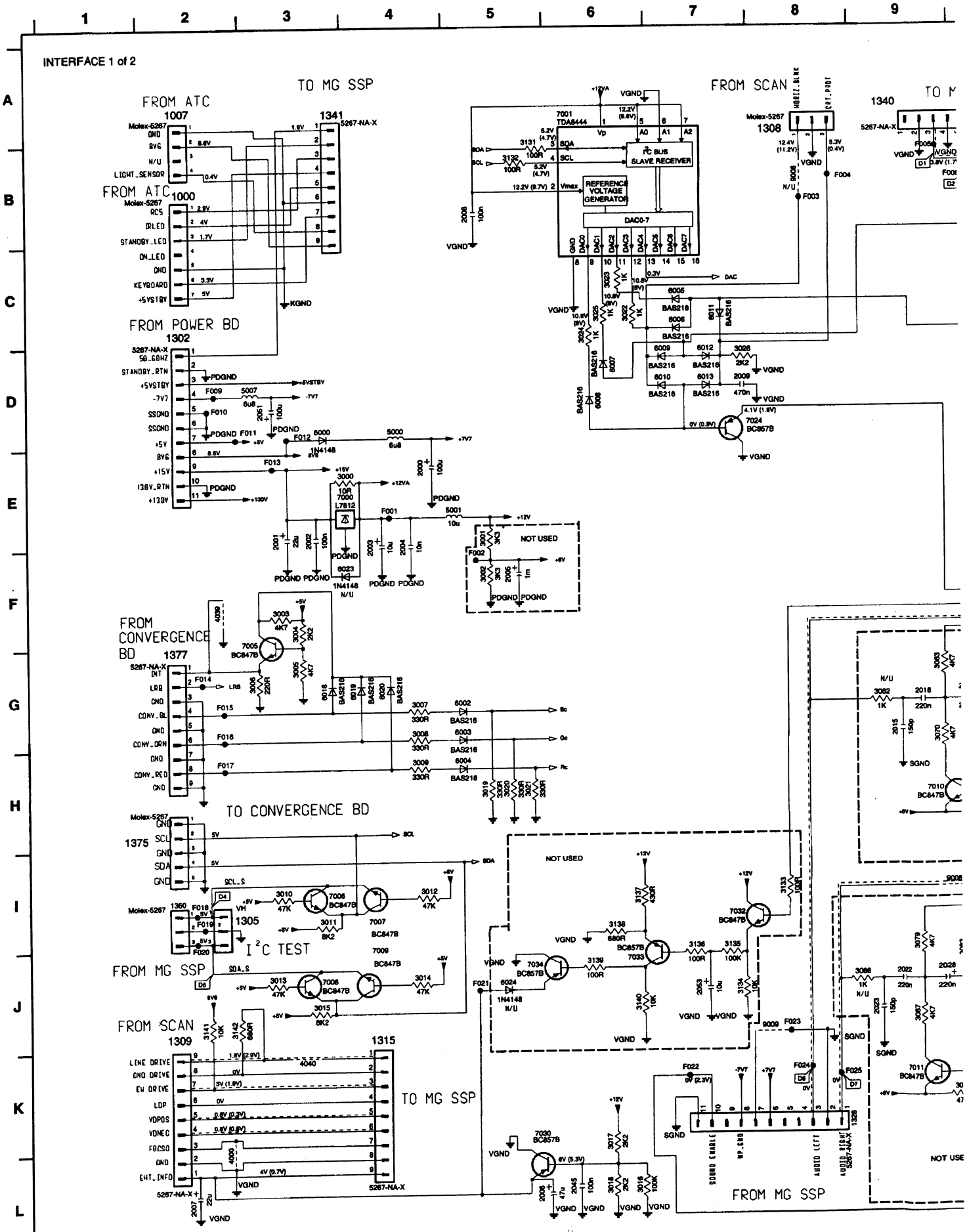
7002 F3
9000 B3

Interface panel



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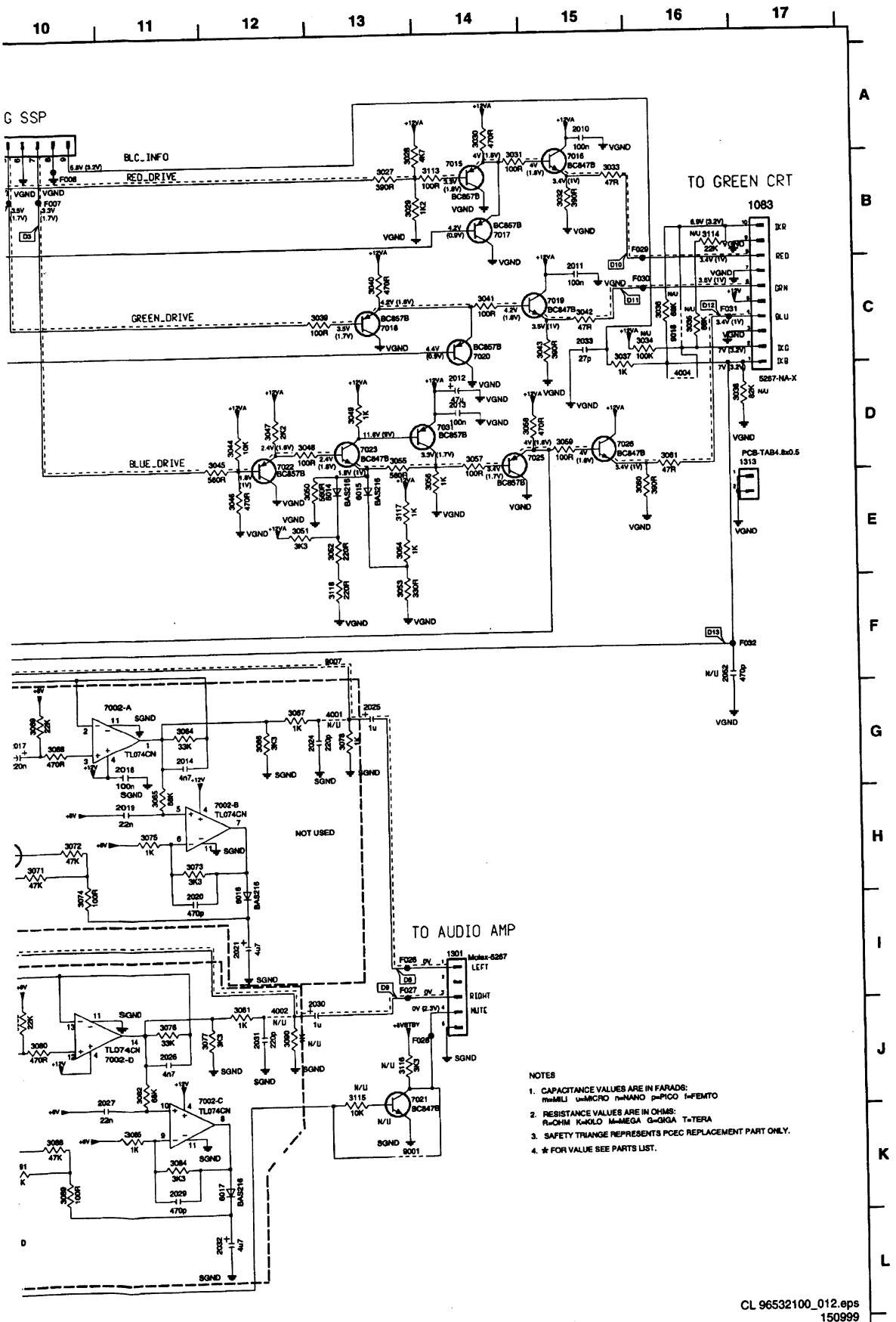

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1341 A3
1360 I2
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1377 G2
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2001 E3
2002 E3
2003 E4
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2005 F5
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2007 L2
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2011 C15
2012 D14
2013 D14
2014 G11
2015 G8
2016 G8
2017 G10
2018 G11
2019 H11
2020 H11
2021 I12
2022 J9
2023 J9
2024 G12
2025 G13
2026 J11
2027 J10
2028 J6
2029 K11
2030 I12
2031 J12
2032 L11
2033 C15
2048 L6
2061 D3
2062 F16
2063 J7
3000 E4
3001 E5
3002 F5
3003 F3
3004 F3
3005 G3
3006 G3
3007 G4
3008 G4
3009 H4
3010 I3
3011 I3
3012 I4
3013 J3
3014 J4
3015 J3
3016 L6
3017 K6
3018 L6
3019 H5
3020 H5
3021 H6
3022 C6
3023 C6
3024 C6
3025 C6
3026 D7
3027 B13
3028 A13
3029 B13
3030 A14
3031 B14
3032 B13
3033 B18
3034 C16
3035 C16
3036 C16
3037 C15
3038 D17
3039 C13
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3041 C14
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3046 E12
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3052 E13
3053 F13
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3055 D13
3056 E14
3057 D14
3058 D15
3059 D15
3060 E16
3061 D16
3062 G9
3063 G9
3064 G11
3065 G11
3066 G12
3067 G12
3068 G10
3069 G10
3070 G9
3071 H10
3072 H10
3073 H11
3074 H10
3075 H11
3076 J11
3077 J11
3078 G13
3079 I9
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3081 J12
3082 J11
3083 J10
3084 K11
3085 K11
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3088 K10
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3118 J13
3116 J13
3117 E13
3118 F13
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3132 B5
3133 I8
3134 J7
3135 J7
3136 J7
3137 I6
3138 I6
3139 J6
3140 J6
3141 J2
3142 J2
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5001 E5
5007 D3
6000 D3
6002 G5
6003 G5
6004 H5
6005 C7
6006 C7
6007 D6
6008 D6
6009 D7
6010 D7
6011 C7
6012 D7
6013 D7
6014 E13
6015 E13
6016 H12
6017 K12
6018 G3
6019 G4
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6024 J5
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7001 A6
7002-A G10
7002-B H12
7002-C J11
7002-D J10
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7006 I9
7007 I4
7008 J3
7009 I4
7010 H9
7011 K9
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7017 B14
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7030 K5
7031 D14
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7033 J6
7034 J5
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8006 B8
8007 F13
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F004 B8
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F011 D3
F012 D3
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F016 G2
F017 H2
F018 I2
F019 I2
F020 J2
F021 J5
F022 K7
F023 J8
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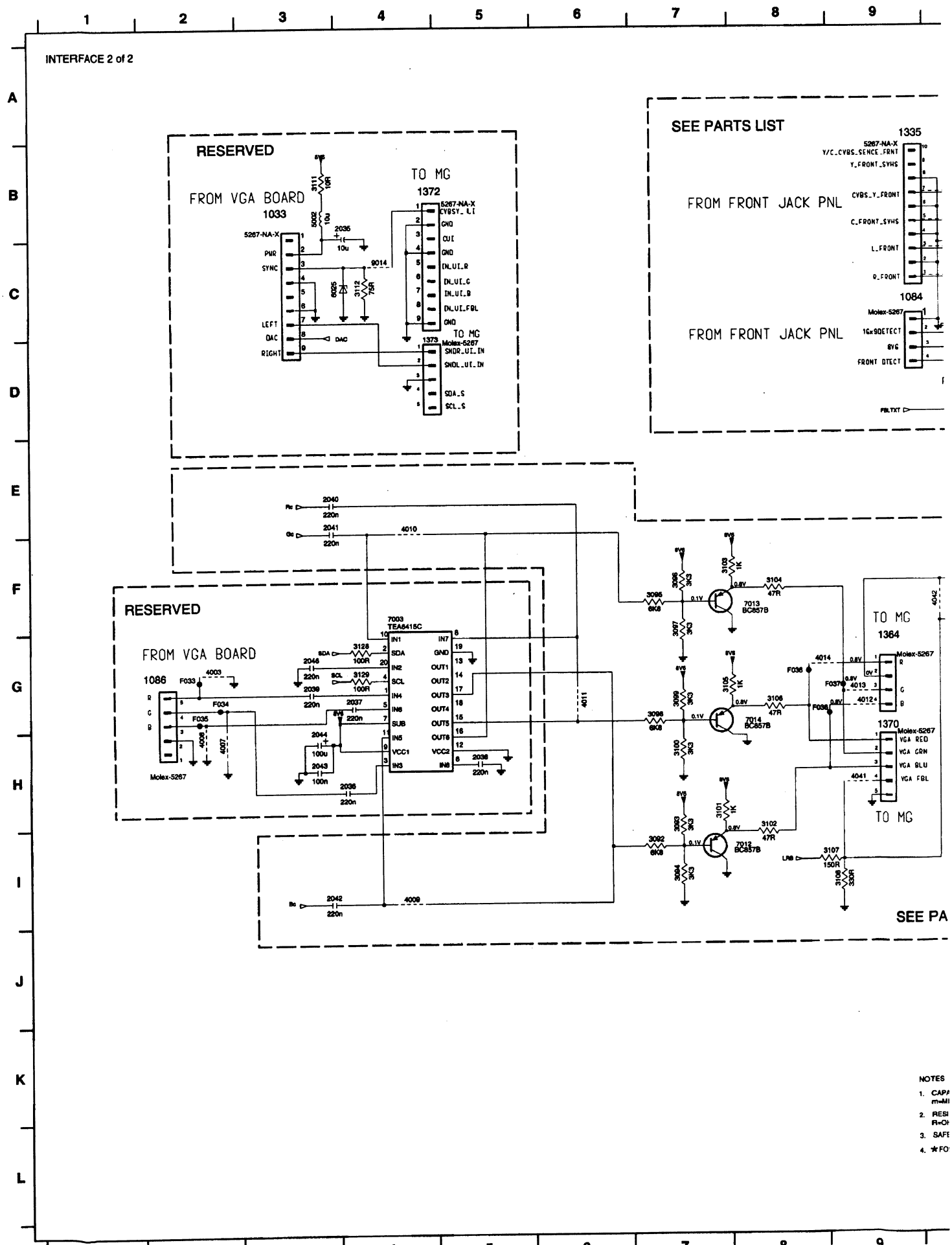
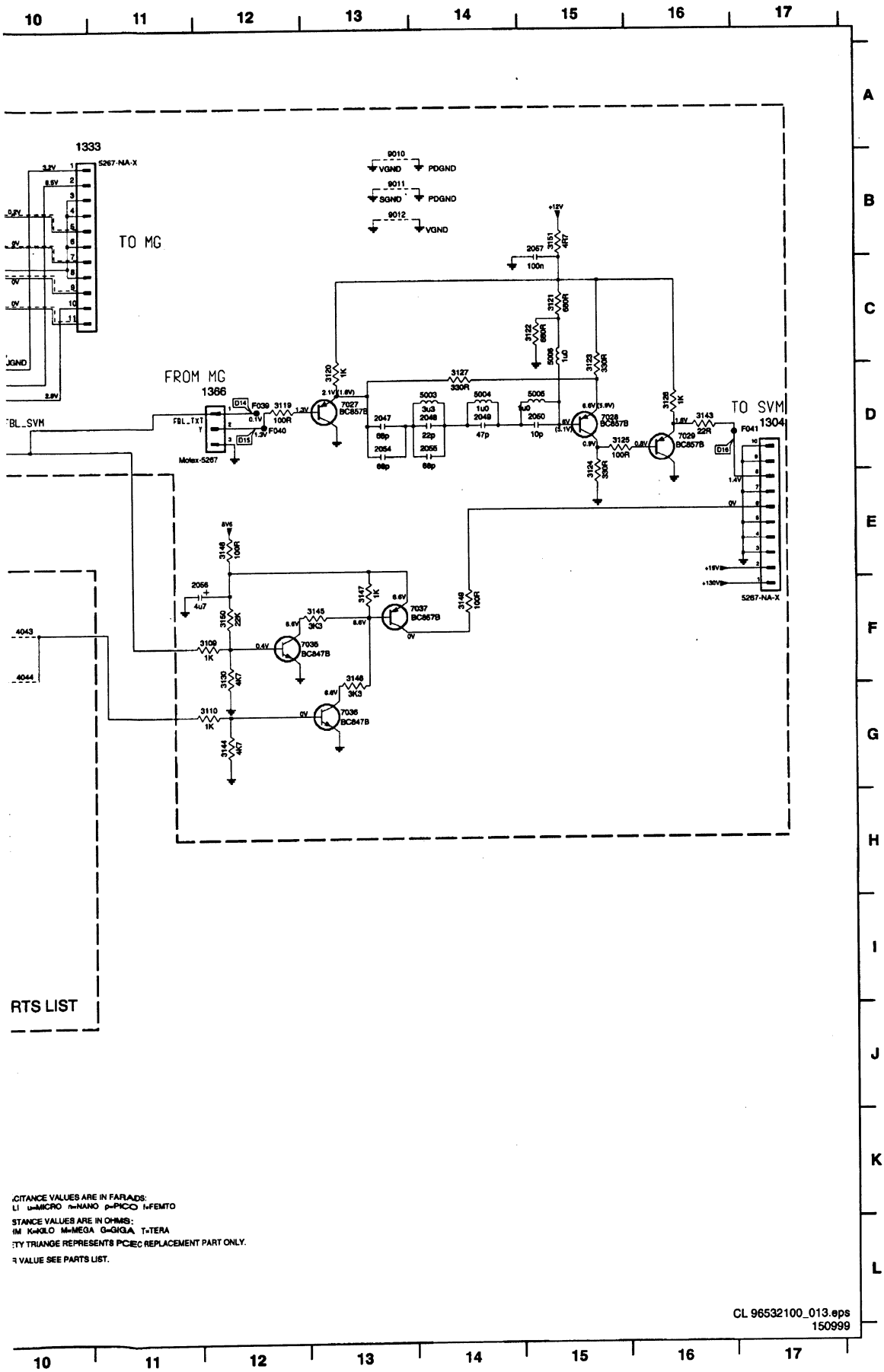
F029 B16
F030 C16
F031 C16
F032 F17

Interface panel





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1366 D12
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1373 D4
2035 B4
2036 H4
2037 G4
2038 H5
2039 G3
2040 E3
2041 E3
2043 I3
2043 H3
2044 H3
2046 G3
2047 D13
2048 D14
2049 D14
2050 D15
2054 D13
2055 D14
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2057 B16
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3083 H7
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3085 F7
3086 F7
3087 F7
3088 G7
3089 G7
3100 H7
3101 H7
3102 I8
3103 F7
3104 F8
3105 G7
3106 G8
3107 I9
3108 I9
3108 F12
3110 G12
3111 B3
3112 C4
3119 D12
3120 D13
3121 C15
3122 C15
3123 C15
3124 D15
3125 D15
3126 D16
3127 D14
3128 G4
3129 G4
3130 F12
3143 D16
3144 G12
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4007 H2
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4014 G8
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4043 F10
4044 F10
5002 B3
5003 D14
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5005 D15
5006 C15
6025 C4
7003 F4
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7013 F8
7014 G8
7027 D13
7028 D15
7029 D16
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7036 G13
7037 F13
9010 B13
9011 B13
9012 B13
9014 C4
F033 G2
F034 G2
F035 G2
F036 G8
F037 G8
F038 G8
F039 D12
F040 D12
F041 D17

CAPACITANCE VALUES ARE IN FARADS:
p=PICO f=FEMTO

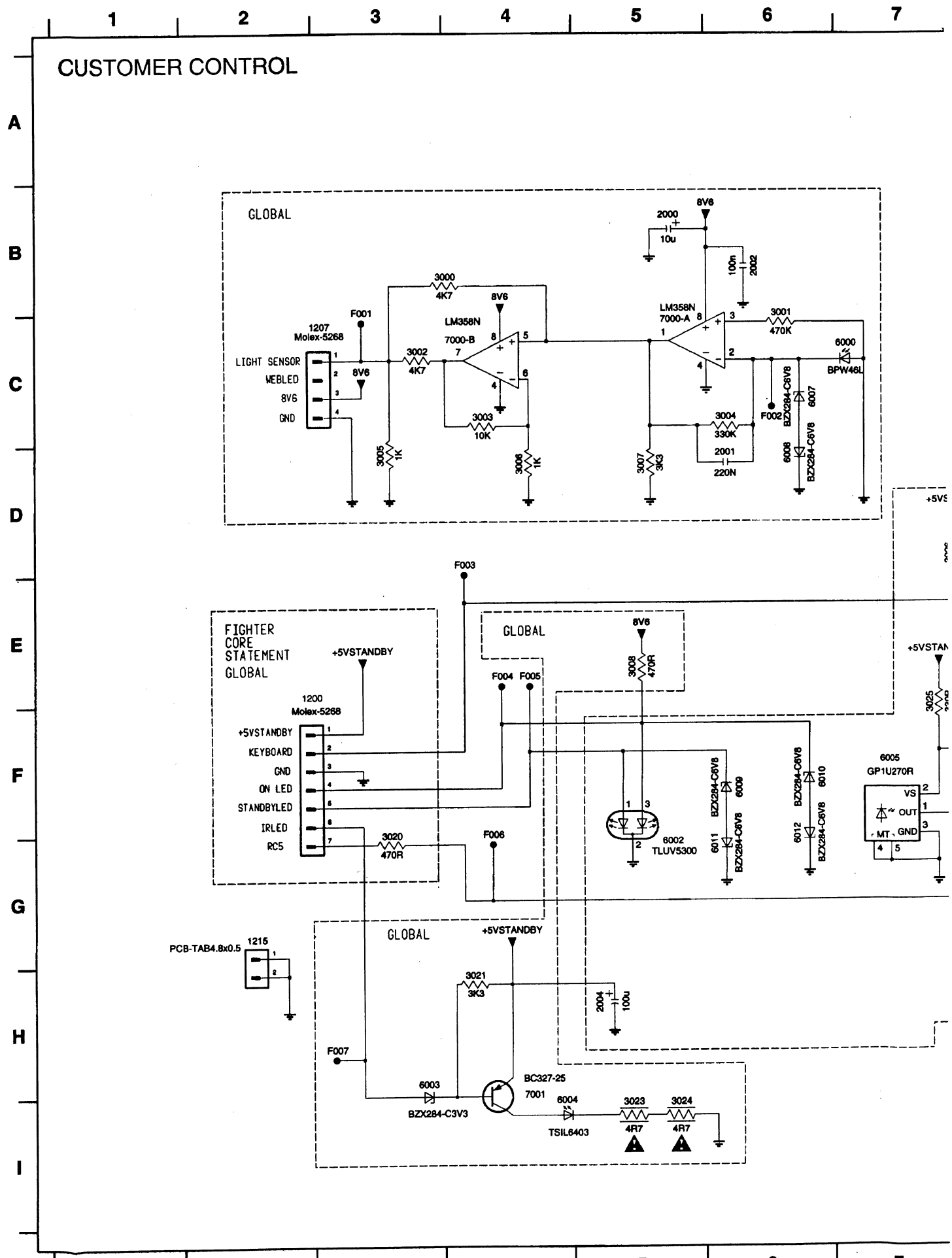
RESISTANCE VALUES ARE IN OHMS:
K=KILO M=MEGA G=GIGA T=TERA

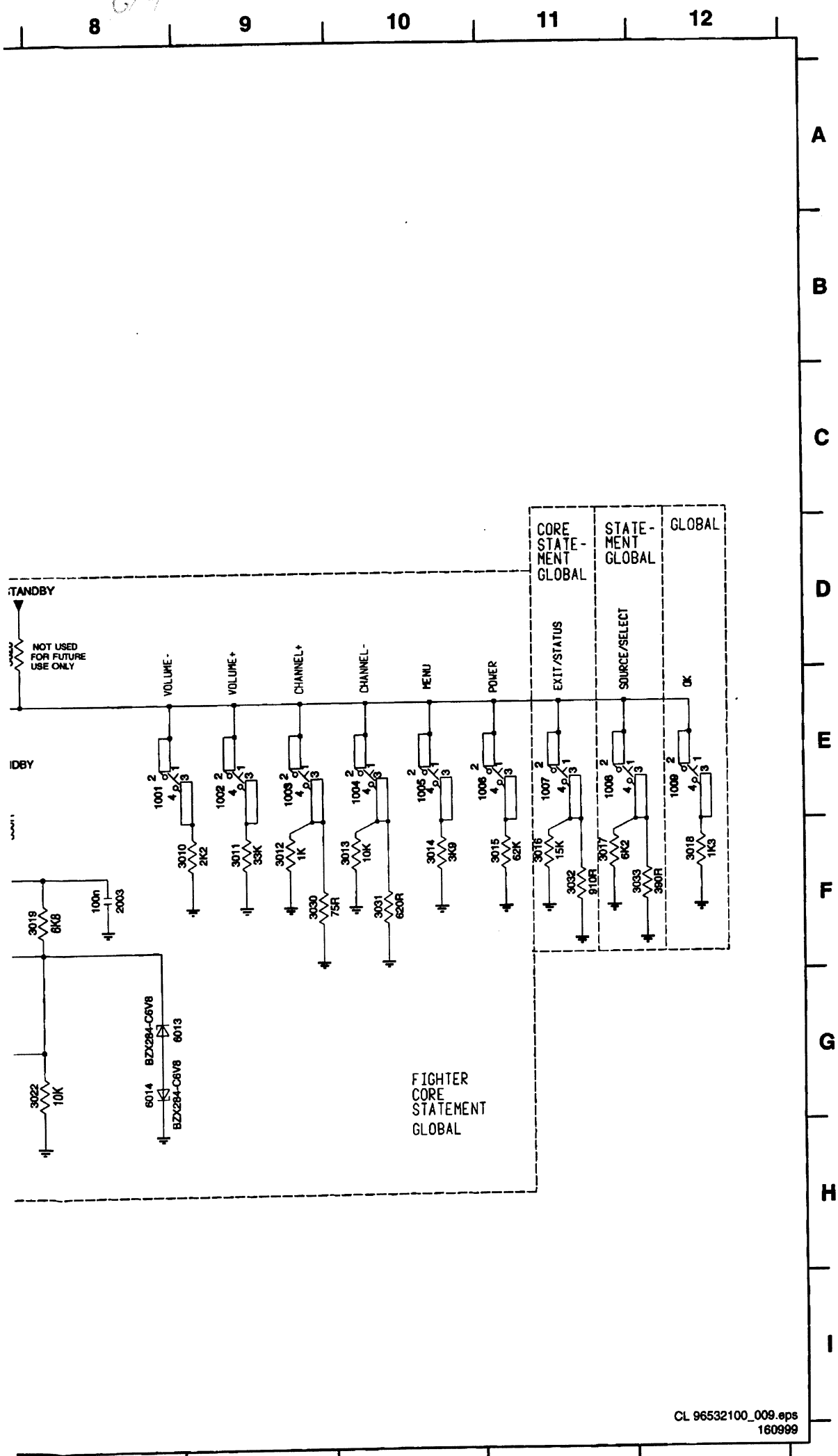
SAFETY TRIANGE REPRESENTS PCIEC REPLACEMENT PART ONLY.

FOR VALUE SEE PARTS LIST.

CL 96532100_013.eps
150999

Customer control panel





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1004 E10
1005 E10
1006 E10
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1009 E12
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2001 D6
2002 B6
2003 F8
2004 H5
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3002 C3
3003 C4
3004 C6
3005 D3
3006 D4
3007 D5
3008 E5
3010 F9
3011 F9
3012 F9
3013 F10
3014 F10
3015 F11
3016 F11
3017 F11
3018 F12
3019 F8
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3022 G8
3023 I5
3024 I5
3025 E7
3026 D7
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6007 C6
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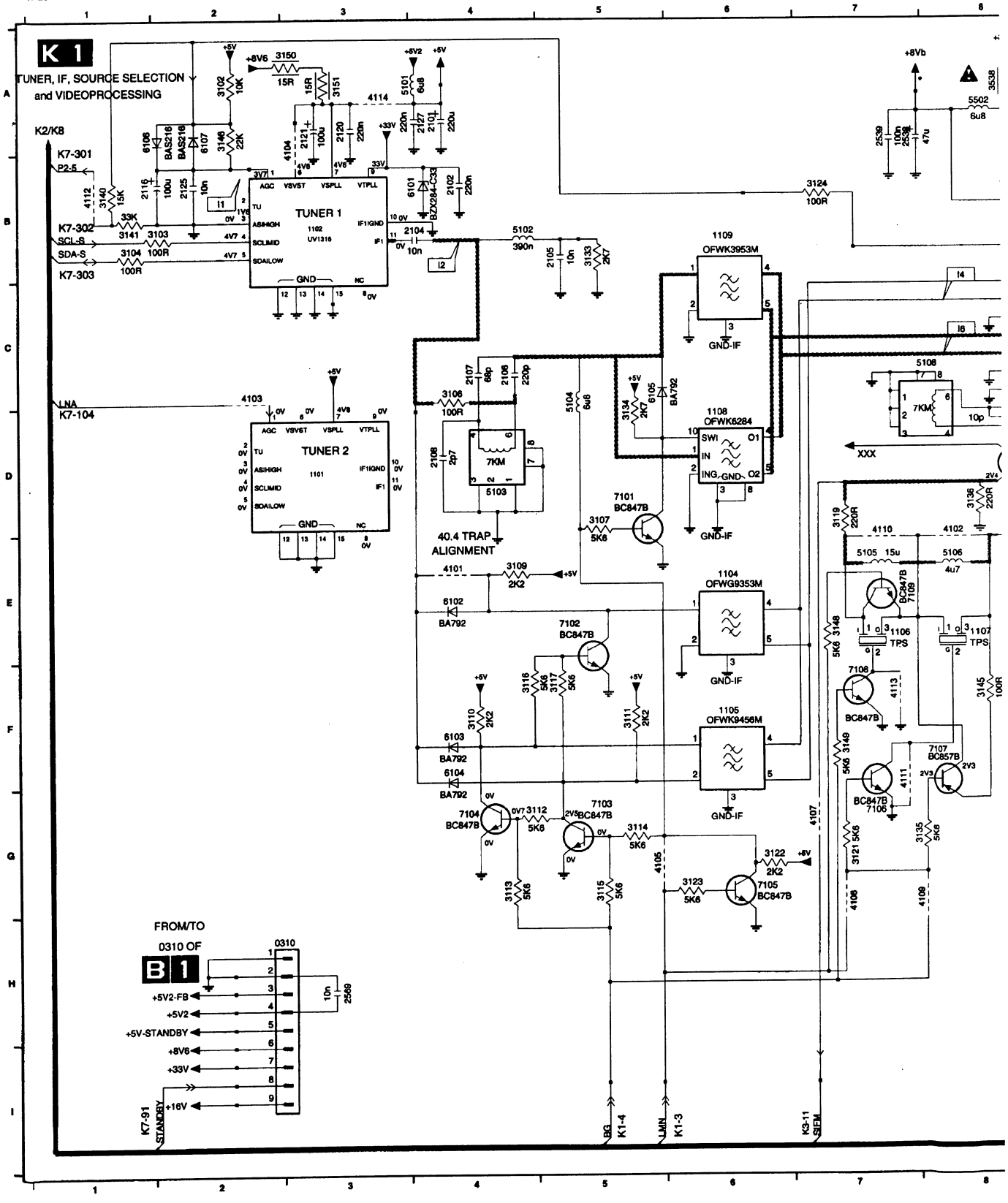
6009 F6
6010 F6
6011 G6
6012 F6
6013 G8
6014 G8
7000-A C5
7000-B C4
7001 H4
F001 C3
F002 C6
F003 D4
F004 E4
F005 E4
F006 G4
F007 H3

SSP panel

0310 H2 1108 D6 2102 B4 2110 C8 2120 A3 2504 F10 2521 E13 2534 B13 2541 A8 2555 G11 2562 I13 3102 A2 3111 F5 3118 C9 3134 D5 3141 B1 3150 A3 3545 F9
1101 D3 1109 B6 2104 B4 2111 C8 2121 A3 2505 F10 2522 E14 2535 B10 2545 E9 2556 H11 2563 I13 3103 B2 3112 G4 3119 D7 3135 G7 3142 B10 3151 A3 3546 G9
1102 B3 1525 E14 2105 B5 2112 A10 2125 B2 2506 F10 2525 E14 2536 B10 2550 G11 2557 G11 2564 I13 3104 B1 3113 G4 3121 G7 3136 D8 3143 A10 3521 E13 3551 G14
1104 E6 1526 E14 2106 C4 2116 B1 2127 A4 2510 C13 2526 E14 2537 B10 2551 H15 2558 I12 2565 F11 3106 C4 3114 G5 3122 G6 3137 D9 3145 F8 3530 B11 3552 G15
1105 F6 1527 E15 2107 C4 2117 D9 2501 F9 2511 C13 2527 E15 2538 A7 2552 H15 2559 I12 2566 F9 3107 D5 3115 G5 3123 G6 3138 D8 3146 A2 3531 B11 3553 G15
1106 E7 1528 E15 2108 D4 2118 D8 2502 F10 2512 C13 2528 E15 2539 A7 2553 F15 2560 I11 2567 G11 3109 E4 3116 F4 3124 B7 3139 E8 3148 E7 3532 B13 3554 F15
1107 E8 2101 A4 2109 C8 2119 A9 2503 F10 2520 E13 2532 B13 2540 B8 2554 F11 2561 I11 2569 H3 3110 F4 3117 F5 3133 B5 3140 B1 3149 F7 3538 A8 3556 H14



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3565 G10	4101 E4	4109 G8	4804 H10	5108 C7	5562 I12	6107 A2	7107 F8	7560 F12
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3567 E11	4103 C2	4111 F7	5102 B4	5502 A8	6102 E4	7102 E5	7109 E7	
3568 F11	4104 A3	4112 B1	5103 D4	5540 G10	6103 F4	7103 G5	7111 D9	
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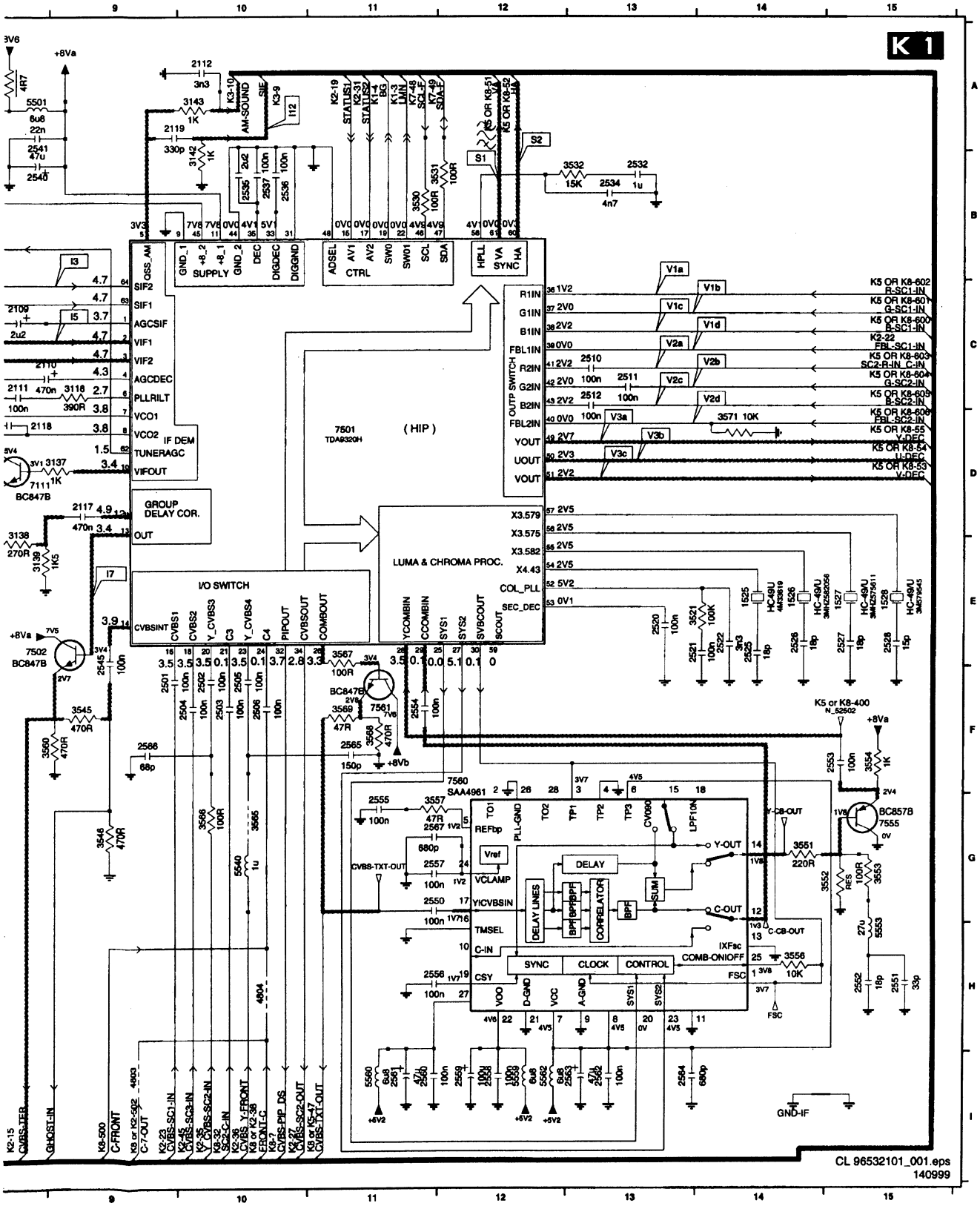

SSP panel

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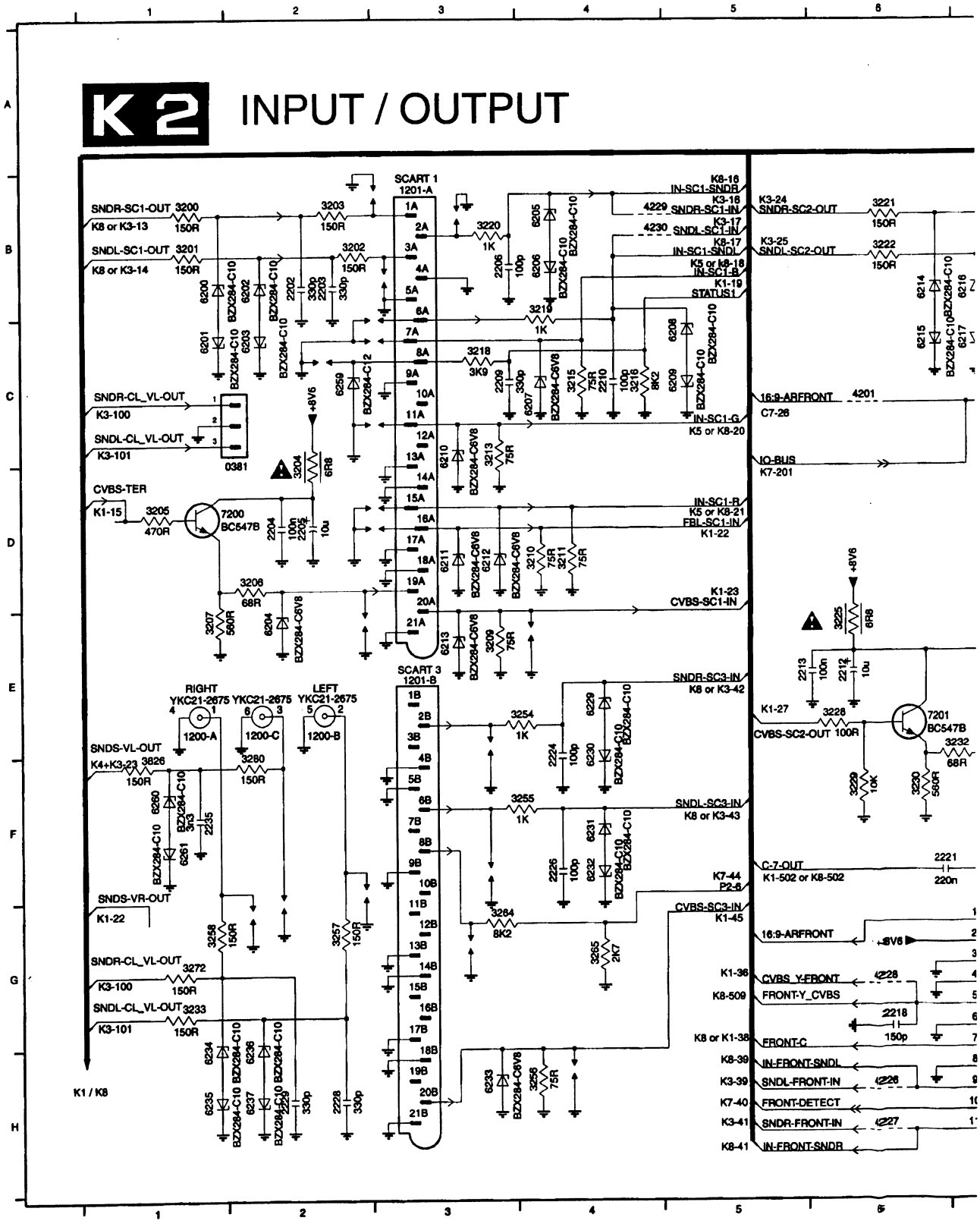
0376 H8	2126 H9	2213 E5	2224 F4	3201 B1	3210 D4	3221 B6	3231 H12	3244 B11	3254 E4	3271 F11	4228 G6	6205 B4	621
0381 C1	2202 B2	2215 B7	2226 F4	3202 B2	3211 D4	3222 B6	3232 E7	3245 C10	3255 F4	3272 G1	4229 B4	6206 B4	621
1200-A E1	2203 B2	2216 B7	2228 H2	3203 B2	3212 E12	3223 B7	3233 G1	3246 B11	3256 H4	3273 G11	4230 B4	6207 C4	621
1200-B E2	2204 D2	2217 B11	2229 H2	3204 D2	3213 C3	3224 B7	3235 D11	3247 F8	3257 G2	3274 G11	4235 D11	6208 C5	621
1200-C E2	2205 D2	2218 G6	2235 F1	3205 D1	3215 C4	3225 E6	3236 D11	3248 G8	3258 G1	3280 F2	6200 B1	6209 C5	621
1201-A B3	2206 B3	2219 C11	2240 E11	3206 D2	3216 C4	3227 G12	3240 C11	3249 G8	3264 G3	3826 F1	6201 C1	6210 C3	621
1201-B E3	2209 C3	2220 C11	2241 F11	3207 E1	3218 C3	3228 E6	3241 C11	3250 F7	3265 G4	4201 C6	6202 B2	6211 D3	622
1202-A B10	2210 C4	2221 F6	3147 H8	3208 E11	3219 B4	3229 F6	3242 C12	3252 F8	3266 F8	4226 H6	6203 C2	6212 D3	622



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6 B7	6225 C10	6234 H1	6244 H11	
7 C7	6226 D10	6235 H1	6259 C2	
8 C7	6227 D11	6236 H2	6260 F1	
9 E7	6228 E10	6237 H2	6261 F1	
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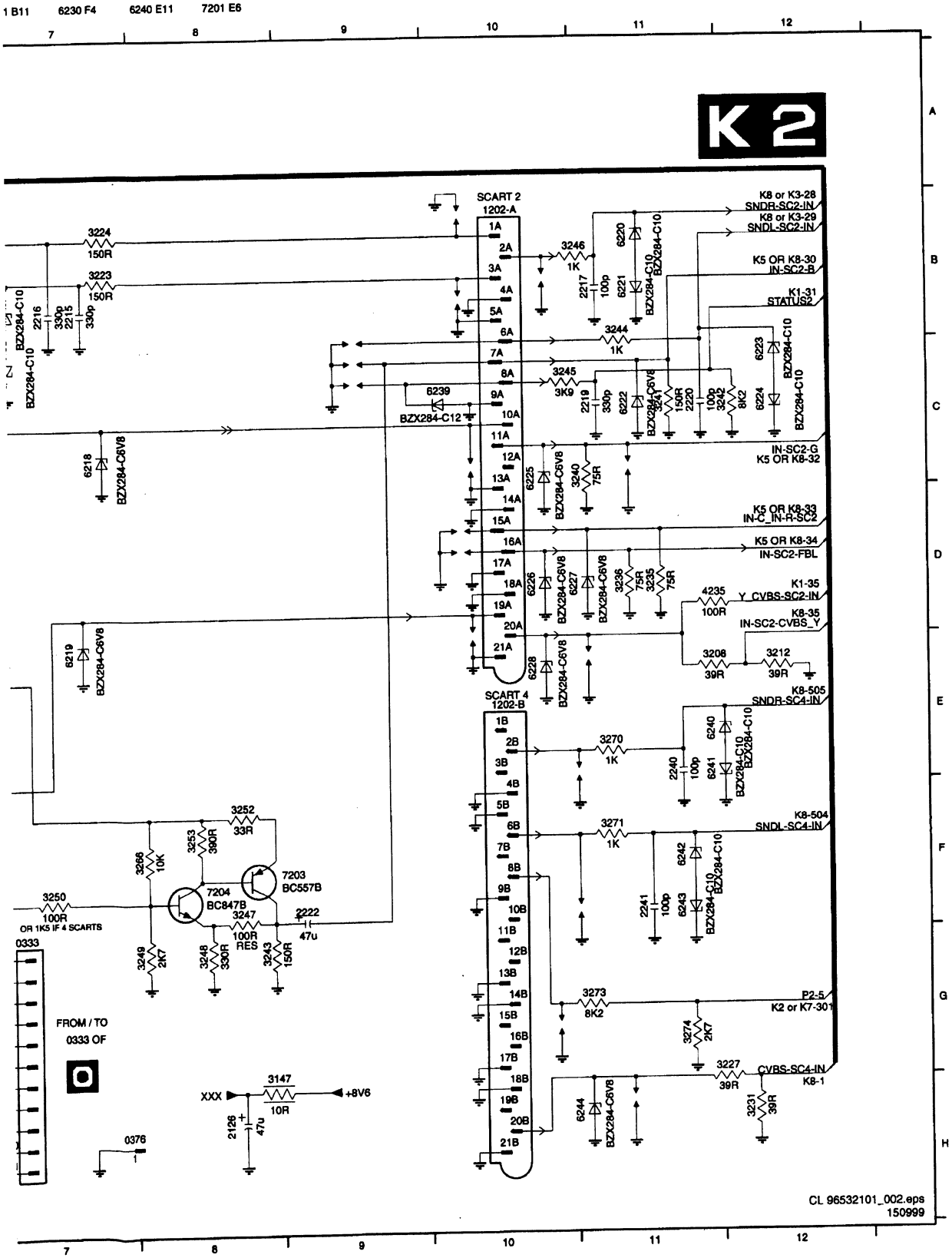
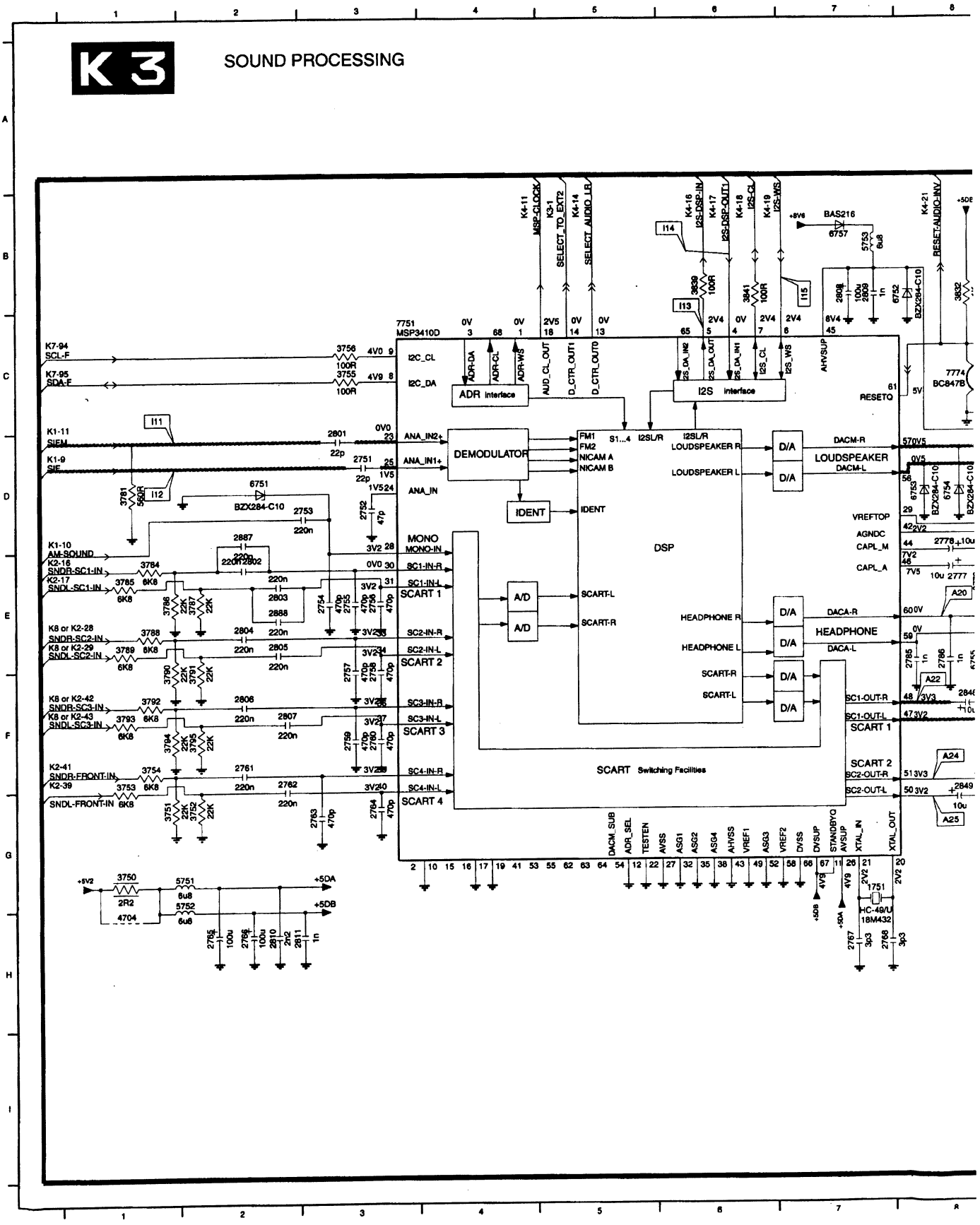


SSP panel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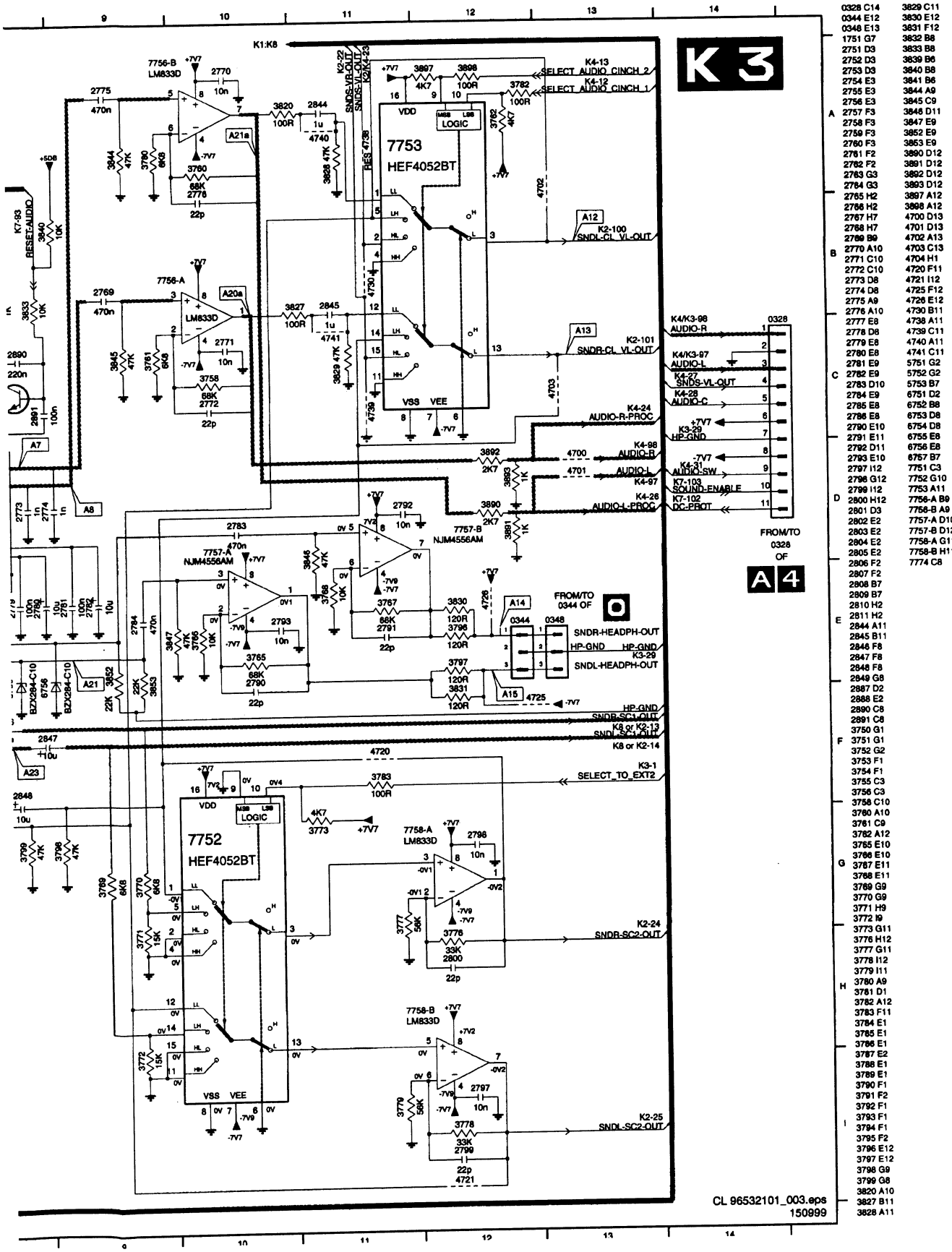
ADR interface
I2S interface
DEMODULATOR
IDENT
DSP
MONO
SCART 1
SCART 2
SCART 3
SCART 4
SCART Switching Facilities
D/A
A/D
LOUDSPEAKER
HEADPHONE
RESETQ
BAS216
BZX284-C10
BC847B
HC-49/U
18M432



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0348 E13 3831 F12
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2751 D3 3833 B8
2752 D3 3839 B6
2753 D3 3840 B8
2754 E3 3841 B6
2755 E3 3844 A9
2756 E3 3845 C9
A 2757 F3 3846 D11
2758 F3 3847 E9
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2760 F3 3853 E9
2761 F2 3890 D12
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2763 G3 3892 D12
2764 G3 3893 D12
2765 H2 3897 A12
2766 H2 3898 A12
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2768 H7 4701 D13
2769 B9 4702 A13
B 2770 A10 4703 C13
2771 C10 4704 H1
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2773 D8 4721 I12
2774 D8 4725 F12
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2778 D8 4739 C11
2779 E8 4740 A11
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D 2800 H12 7756-A B9
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2805 E2 7758-B H11
2806 F2 7774 C8
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2849 G8
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3786 E1
3787 E2
3788 E1
3789 E1
3790 F1
3791 F2
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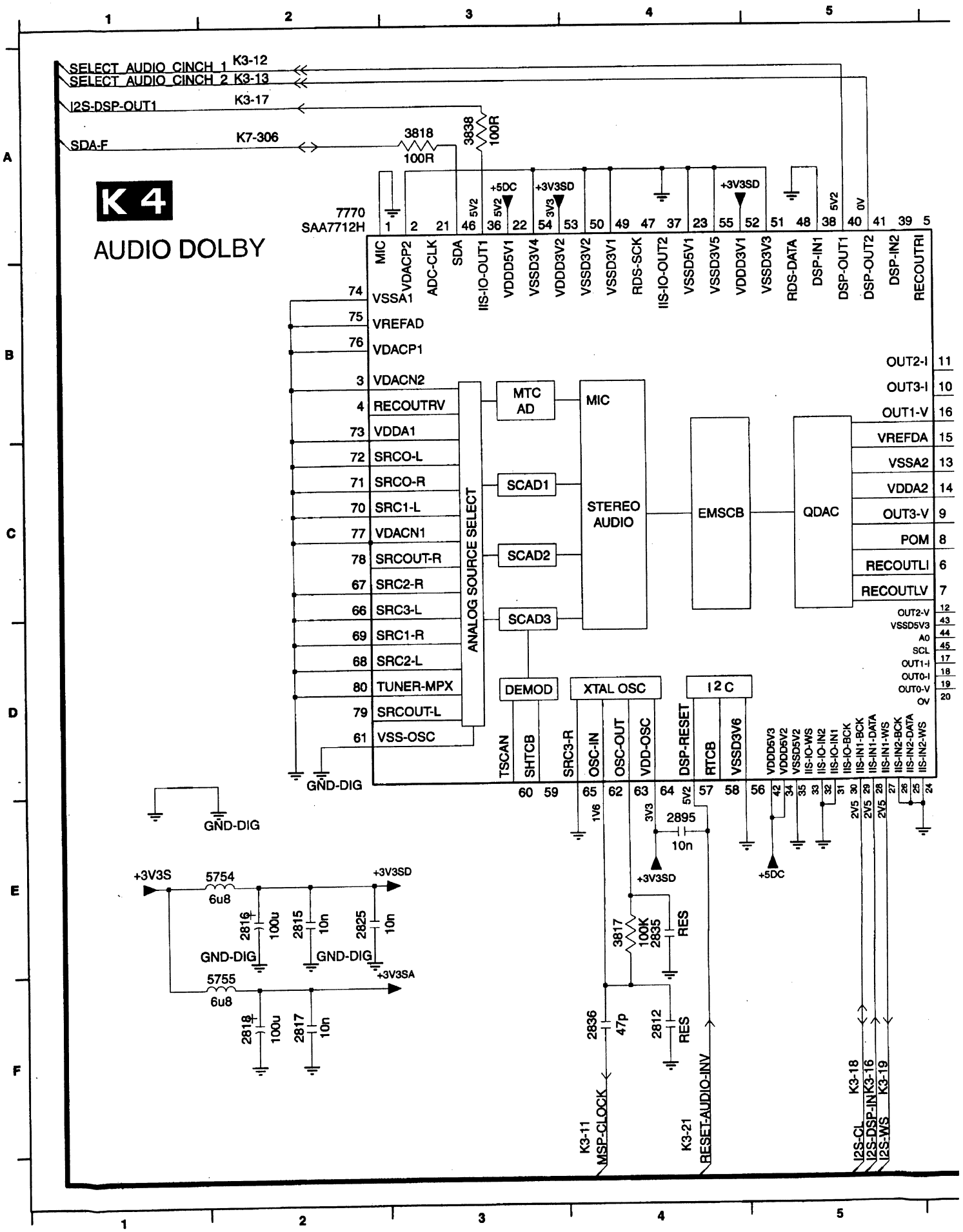
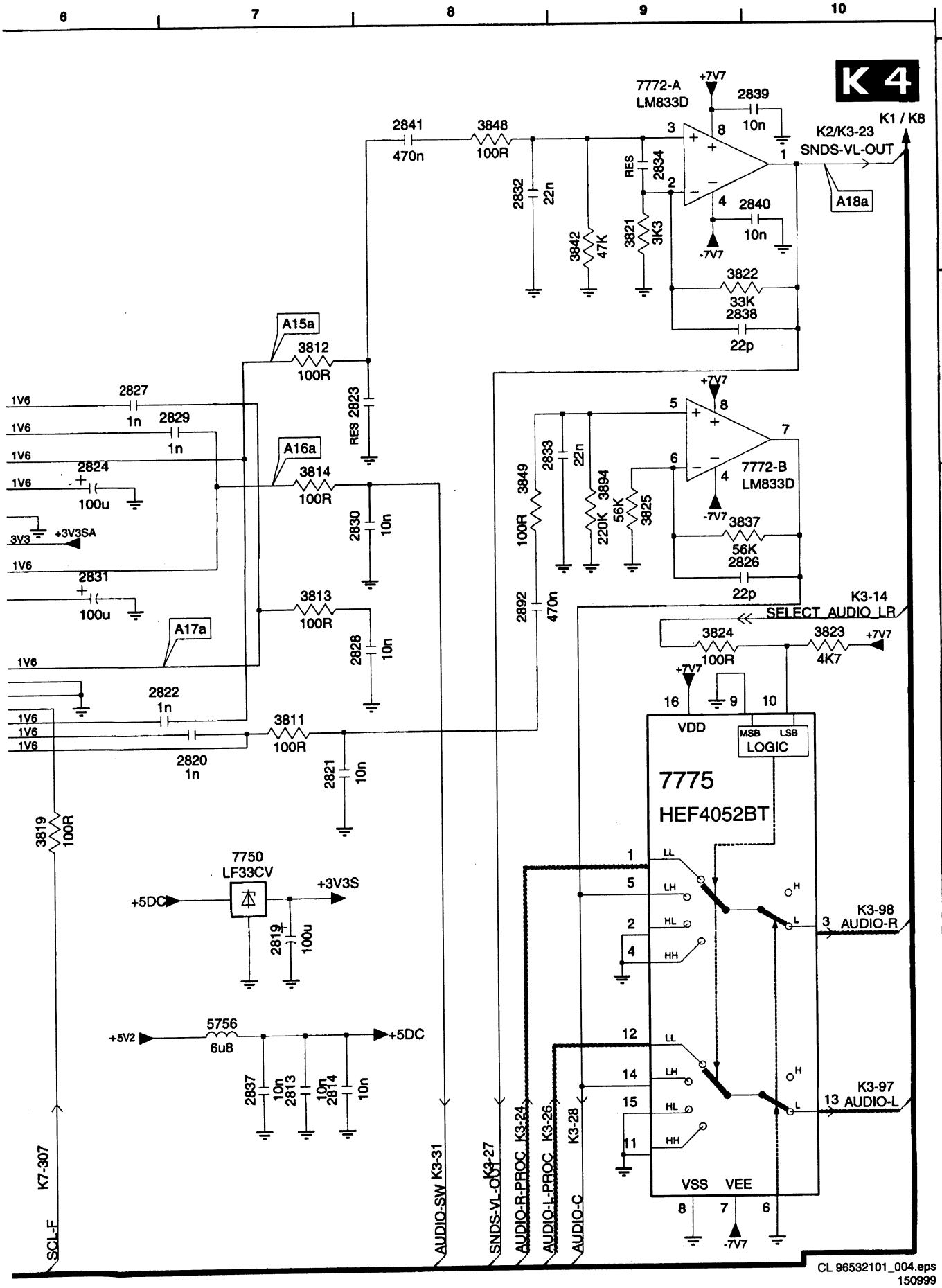
3797 E12
3798 G9
3799 G8
3820 A10
3827 B11
3828 A11

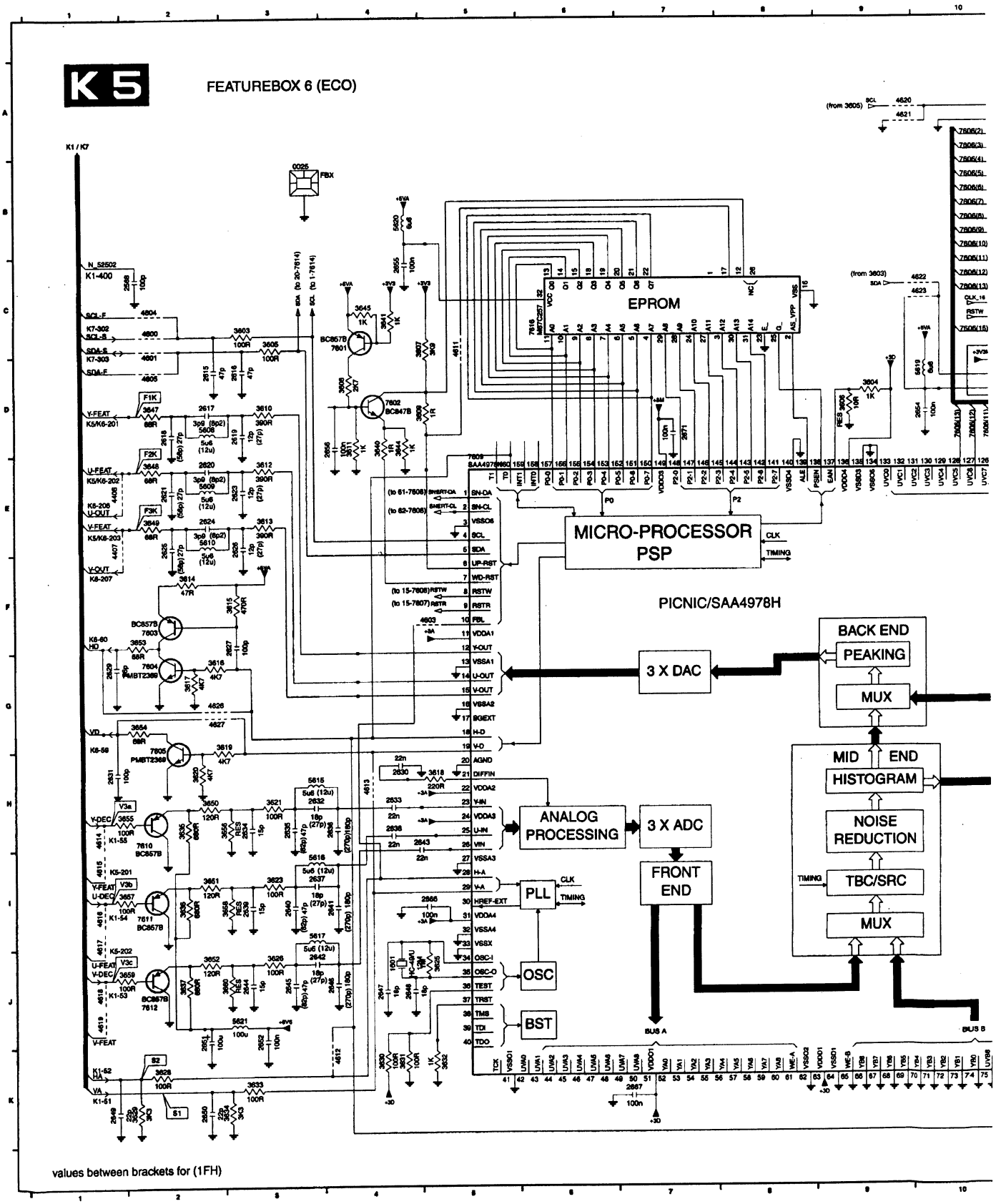
SSP panel

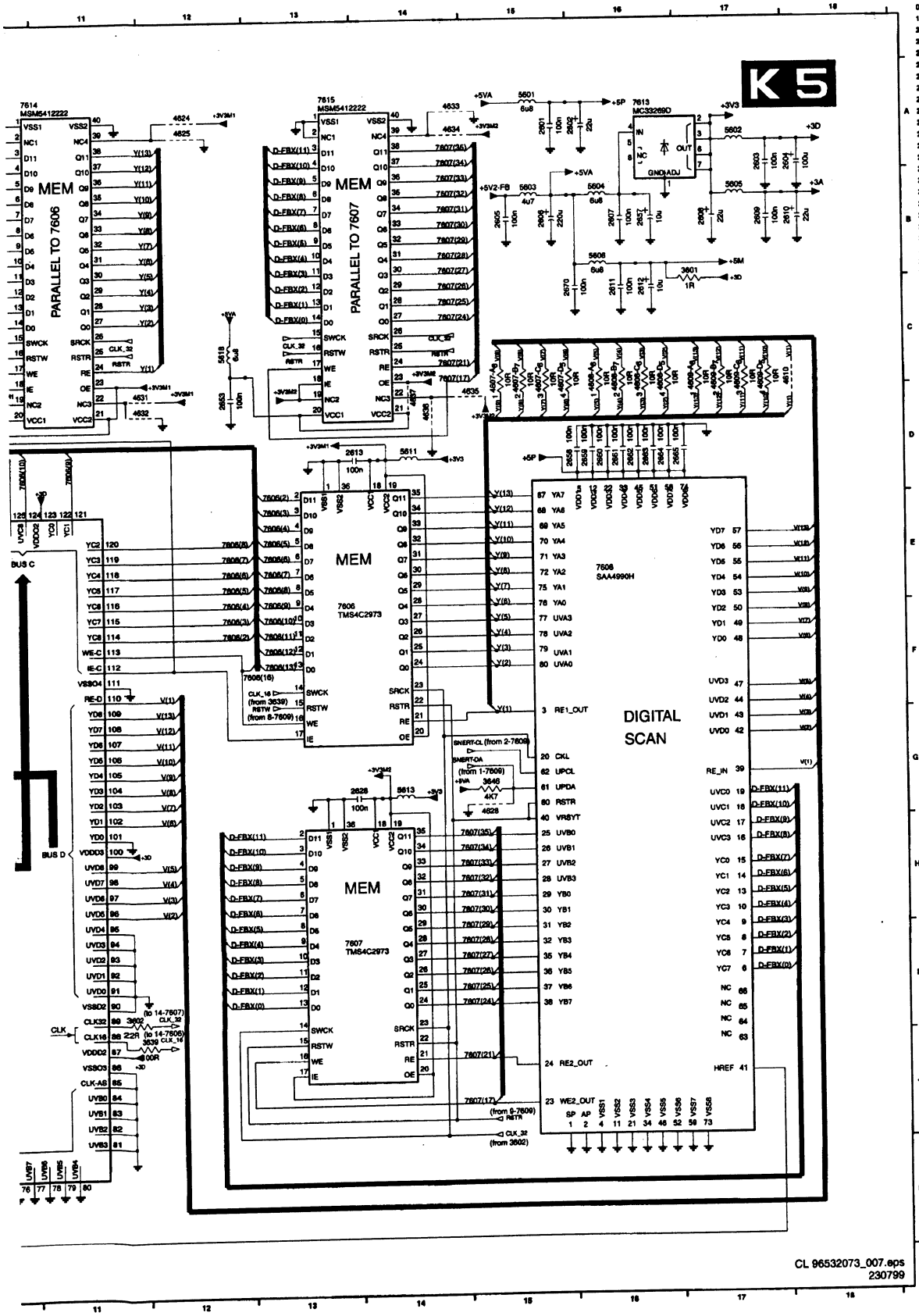

K 4
AUDIO DOLBY
7770
SAA7712H
SELECT AUDIO CINCH 1 K3-12
SELECT AUDIO CINCH 2 K3-13
I2S-DSP-OUT1 K3-17
SDA-F K7-306
3818 100R
3838 100R
+5DC
+3V3SD
+3V3SD
MIC
VDACP2
ADC-CLK
SDA
IIS-IO-OUT1
VDDD5V1
VSSD3V4
VDDD3V2
VSSD3V2
VSSD3V1
RDS-SCK
IIS-IO-OUT2
VSSD5V1
VSSD3V5
VDDD3V1
VSSD3V3
RDS-DATA
DSP-IN1
DSP-OUT1
DSP-OUT2
DSP-IN2
RECOUTRI
VSSA1
VREFAD
VDACP1
VDACN2
RECOUTRV
VDDA1
SRCO-L
SRCO-R
SRC1-L
VDACN1
SRCOUT-R
SRC2-R
SRC3-L
SRC1-R
SRC2-L
TUNER-MPX
SRCOUT-L
VSS-OSC
ANALOG SOURCE SELECT
MTC AD
SCAD1
SCAD2
SCAD3
DEMOD
MIC
STEREO AUDIO
EMSCB
QDAC
XTAL OSC
I2C
TSCAN
SHTCB
SRC3-R
OSC-IN
OSC-OUT
VDD-OSC
DSP-RESET
RTCB
VSSD3V6
OUT2-I
OUT3-I
OUT1-V
VREFDA
VSSA2
VDDA2
OUT3-V
POM
RECOUTLI
RECOUTLV
OUT2-V
VSSD5V3
A0
SCL
OUT1-I
OUT0-I
OUT0-V
OV
GND-DIG
+3V3S
5754
6u8
+3V3SD
2816 100u
2815 10n
2825 10n
GND-DIG
GND-DIG
5755
6u8
+3V3SA
2818 100u
2817 10n
2895 10n
3817 100K
2835 RES
2836 47p
2812 RES
K3-11 MSP-CLOCK
K3-21 RESET-AUDIO-INV
K3-18 I2S-CL
K3-16 I2S-DSP-IN
K3-19 I2S-WS



2812 F4
2813 F7
2814 F7
2815 E2
2816 E2
2817 F2
2818 F2
2819 E7
2820 D7
2821 D7
2822 D6
2823 B8
2824 B6
2825 E2
2826 C9
2827 B6
2828 C8
2829 B7
2830 C8
2831 C6
2832 A8
2833 B9
2834 A9
2835 E4
2836 F4
2837 F7
2838 B9
2839 A10
2840 A10
2841 A8
2892 C8
2895 E4
3811 D7
3812 B7
3813 C7
3814 C7
3817 E4
3818 A3
3819 D6
3821 A9
3822 B9
3823 C10
3824 C9
3825 C9
3837 C9
3838 A3
3842 A9
3848 A8
3849 C8
3894 C9
5754 E2
5755 F2
5756 E7
7750 E7
7770 A2
7772-A A9
7772-B C9
7775 D9

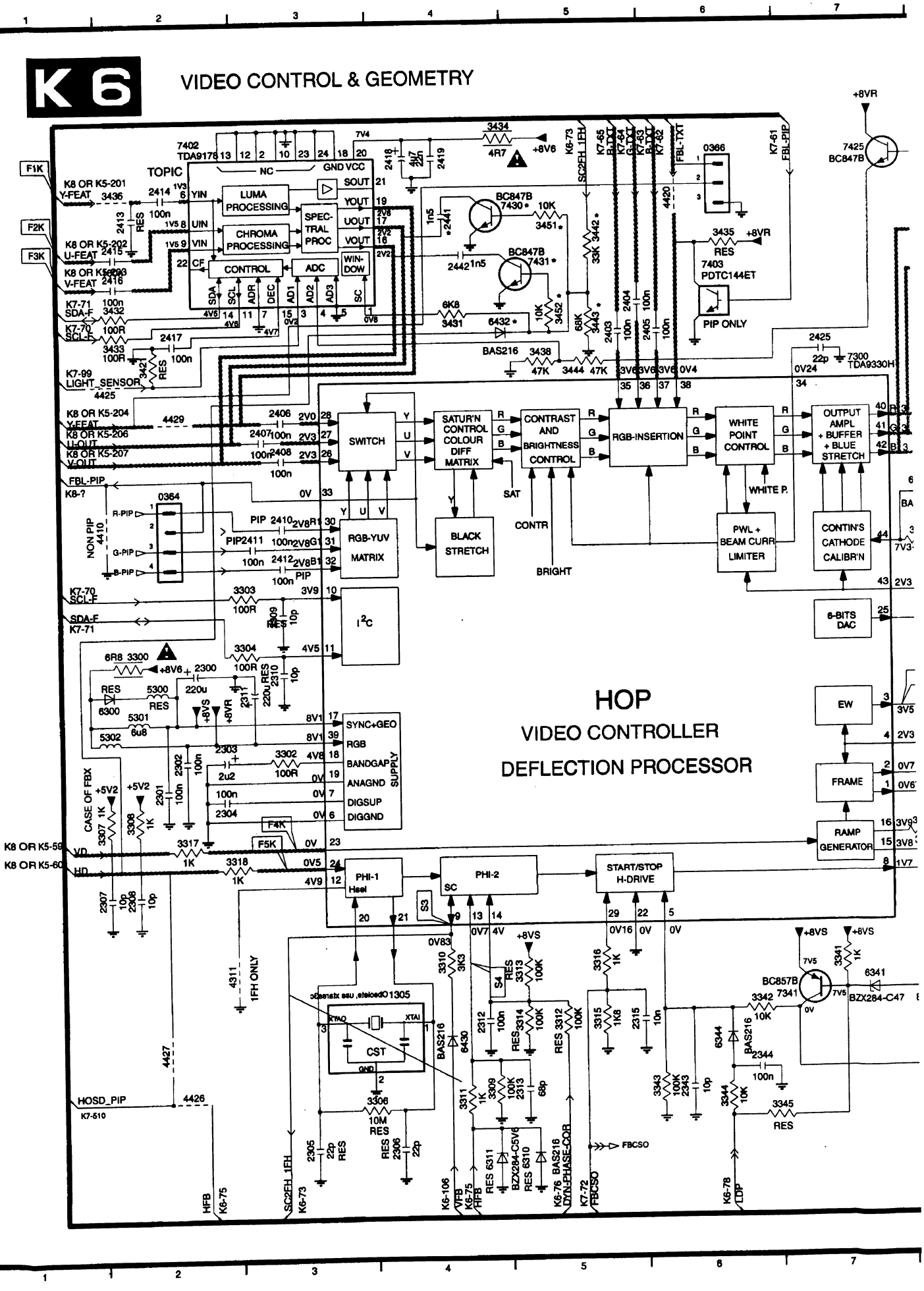
SSP panel

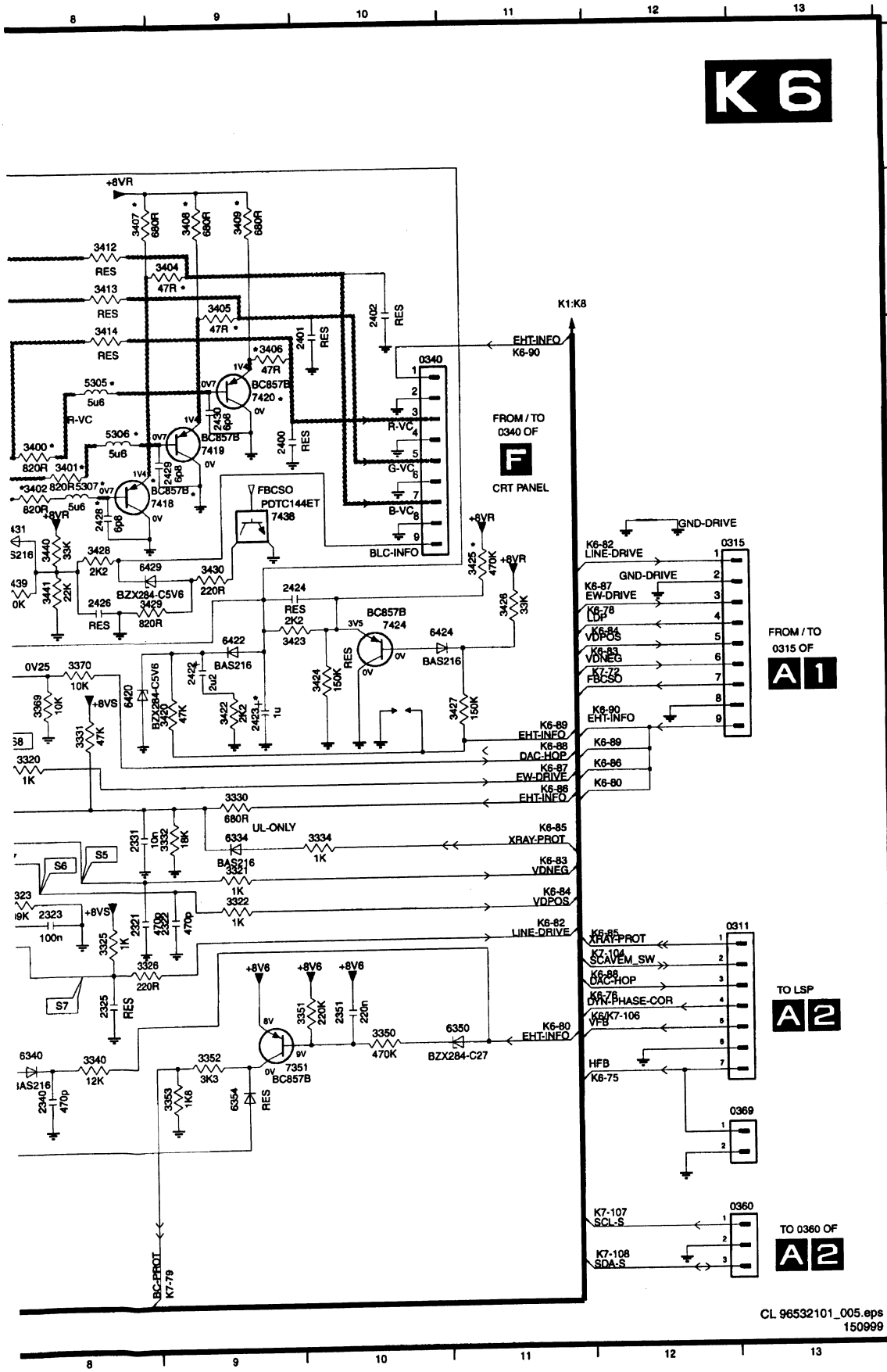

K5
FEATUREBOX 6 (ECO)
EPROM
MICRO-PROCESSOR PSP
PICNIC/SAA4978H
3 X DAC
BACK END
PEAKING
MUX
MID END
HISTOGRAM
NOISE REDUCTION
TBC/SRC
MUX
ANALOG PROCESSING
3 X ADC
FRONT END
PLL
OSC
BST
BUS A
BUS B
values between brackets for (1FH)



0025 B3 3633 K3
1601 J4 3634 K3
2507 A7 3635 H2
2508 A7 3636 I2
2509 A7 3637 J2
2568 C3 3639 J12
2601 A15 3640 D4
2602 A16 3641 C4
2603 A17 3644 D4
2604 A16 3645 C4
2605 B15 3646 G15
2606 B15 3647 D2
2607 B16 3648 E2
2608 B17 3649 E2
2609 B17 3650 H2
2610 B18 3651 I2
2611 C16 3652 J2
2612 C16 3653 F2
2613 D13 3654 G2
2615 D2 3655 H2
2616 D3 3656 H3
2617 D2 3657 I2
2618 D2 3658 I3
2619 D3 3659 J2
2620 E2 3660 J3
2621 E2 4606 E1
2623 E3 4607 E1
2624 E2 4608 B2
2625 E2 4609 C2
2626 E3 4601 D2
2627 F3 4603 F5
2628 G13 4604 C2
2629 G1 4605 D2
2630 H4 4607-A C15
2631 H1 4607-B C15
2632 H3 4607-C C15
2633 H4 4607-D C15
2634 H3 4608-A C16
2635 H3 4608-B C16
2636 H4 4608-C C16
2637 I3 4608-D C16
2638 H4 4609-A C17
2639 I3 4609-B C17
2640 I3 4609-C C17
2641 I4 4609-D C17
2643 J3 4610 C18
2643 H4 4611 C5
2644 J3 4612 K4
2645 J3 4613 H4
2646 J4 4614 H1
2647 J4 4615 I1
2648 J4 4616 I1
2649 K1 4617 I1
2650 K2 4618 J1
2651 J2 4619 J1
2652 J3 4620 A9
2653 D12 4621 A9
2654 D10 4622 C10
2655 C4 4623 C10
2656 D4 4624 A12
2657 B16 4625 A12
2658 D16 4626 G2
2659 D16 4627 G2
2660 D16 4628 G15
2661 D16 4631 D12
2662 D16 4632 D12
2663 D16 4633 A14
2664 D16 4634 A14
2665 D17 4635 D15
2666 I5 4636 D14
2667 K7 4637 D14
2670 C16 5601 A15
2671 D7 5602 A17
3529-B A5 5603 B16
3529-C A5 5604 B16
3529-D A5 5605 B17
3570-A A7 5606 B16
3570-B A7 5608 D2
3570-C A7 5609 E2
3570-D B7 5610 E2
3573 B5 5611 D14
3574 A6 5613 G14
3601 B17 5618 H3
3602 I11 5616 I3
3603 C3 5617 I3
3604 D8 5618 C12
3606 C3 5619 D10
3606 D9 5620 B4
3607 C5 5621 J3
3608 D4 7601 C4
3609 D6 7602 D4
3610 D3 7603 F2
3611 D4 7604 G2
3612 E3 7605 G2
3613 E3 7606 F13
3614 F2 7607 I13
3615 F3 7608 E16
3616 G2 7609 E5
3617 G2 7610 H2
3618 H5 7611 I2
3619 G3 7612 J2
3620 H2 7613 A16
3621 H3 7614 A10
3623 I3 7615 A13
3625 J5 7616 C6
3626 J3
3628 K2
3629 K2
3630 K4
3631 K4
3632 K5

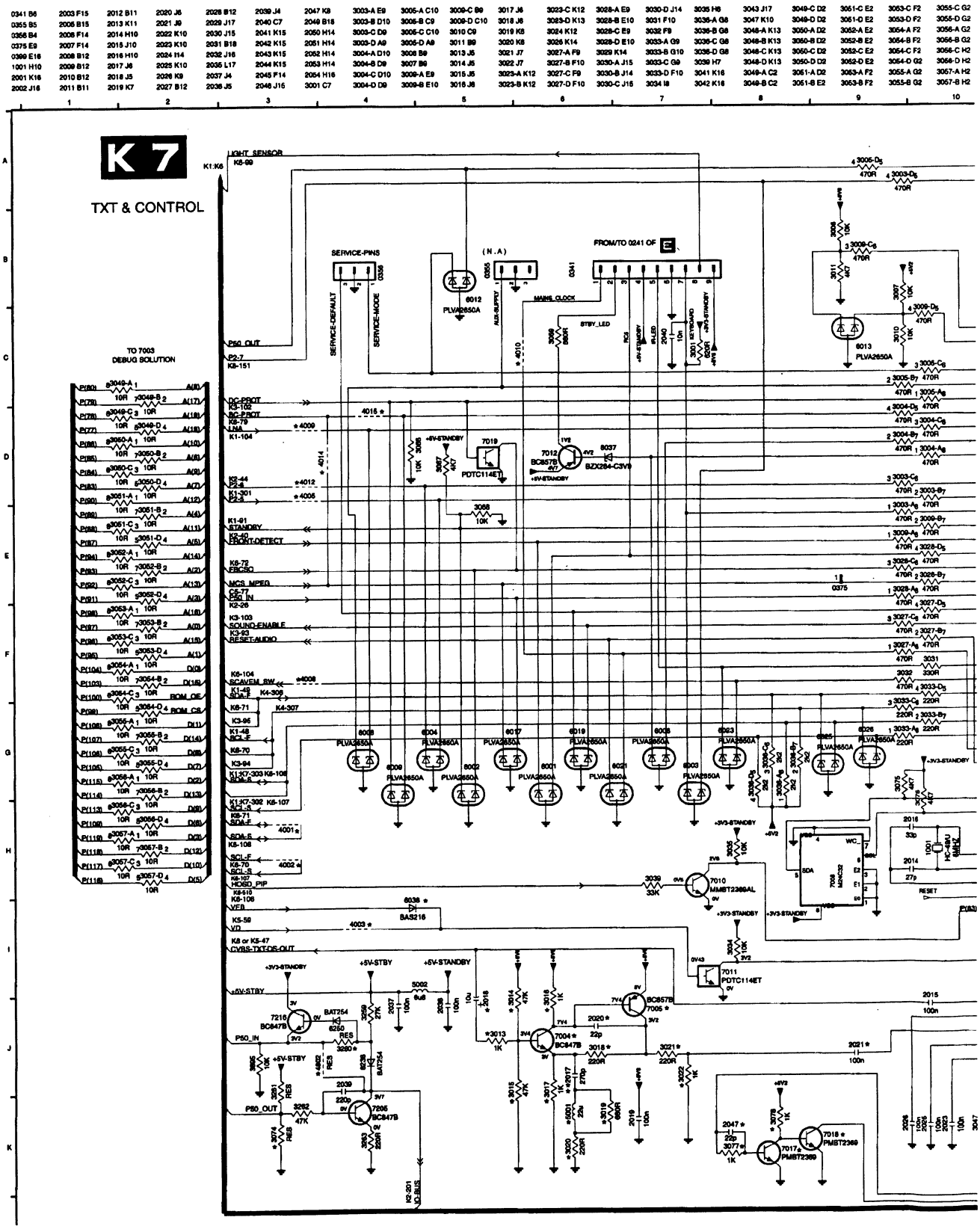
SSP panel


K 6
VIDEO CONTROL & GEOMETRY
HOP
VIDEO CONTROLLER
DEFLECTION PROCESSOR
TOPIC
LUMA PROCESSING
CHROMA PROCESSING
SPEC-TRAL PROC
CONTROL
ADC
WIN-DOW
SWITCH
SATUR'N CONTROL COLOUR DIFF MATRIX
CONTRAST AND BRIGHTNESS CONTROL
RGB-INSERTION
WHITE POINT CONTROL
OUTPUT AMPL + BUFFER + BLUE STRETCH
RGB-YUV MATRIX
BLACK STRETCH
PWL + BEAM CURR LIMITER
CONTIN'S CATHODE CALIBR'N
6-BITS DAC
I²C
SYNC+GEO
RGB
BANDGAP
ANAGND
DIGSUP
DIGGND
SUPPLY
PHI-1
PHI-2
START/STOP H-DRIVE
EW
FRAME
RAMP GENERATOR
PIP ONLY
1FH ONLY
CST
BRIGHT
CONTR
SAT
WHITE P.

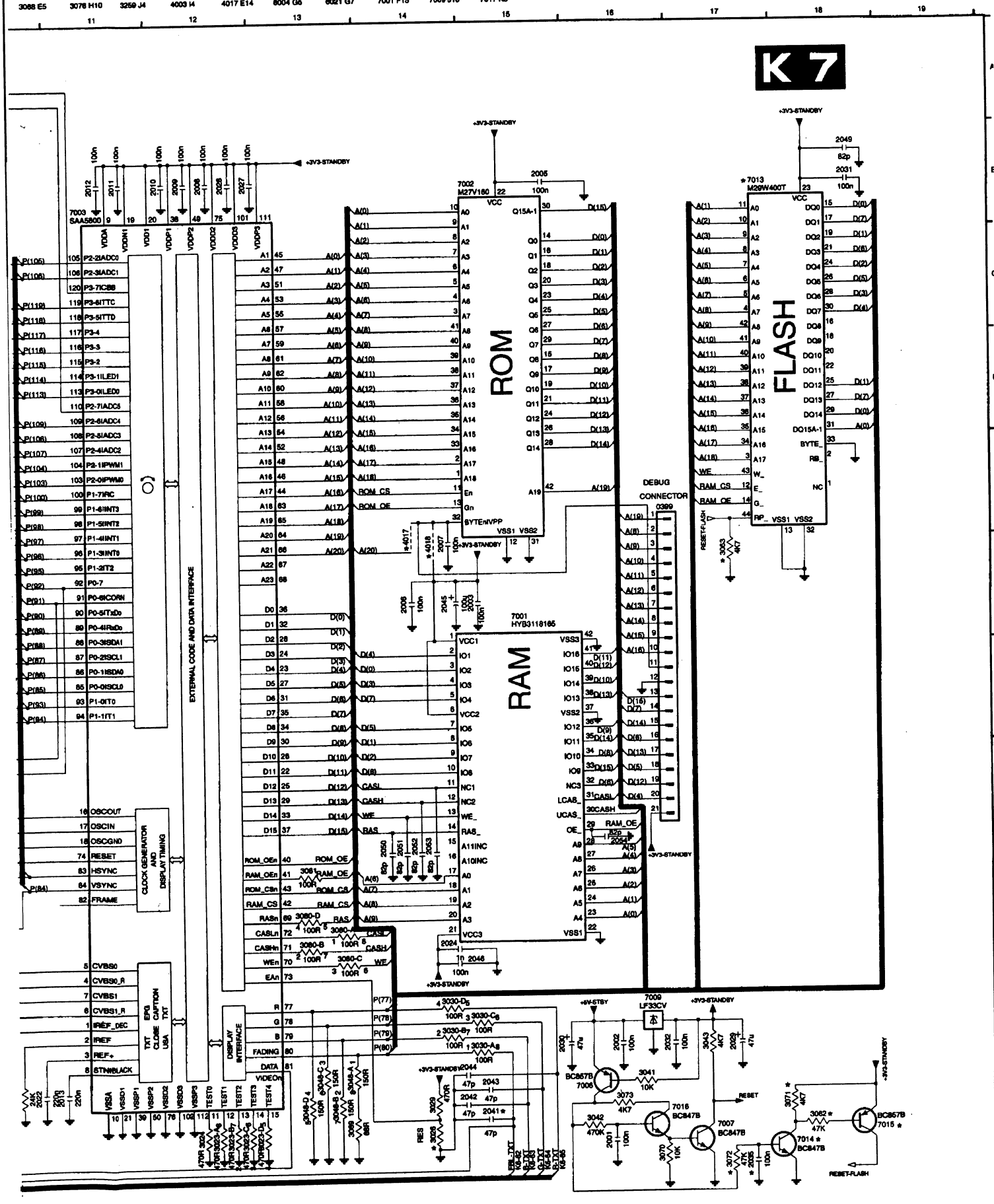


	0311 G12	3331 E8	7402 A2
	0315 D12	3332 F9	7403 B6
	0340 C10	3334 F10	7418 D8
	0360 I12	3340 H8	7419 C9
	0364 D2	3341 G7	7420 C9
	0366 A6	3342 H6	7424 E10
A	0369 H12	3343 H6	7425 A7
	1305 H4	3344 H6	7430 B5
	2300 E2	3345 H6	7431 B5
	2301 F2	3350 G10	7438 D9
	2302 F2	3351 G10	
	2303 F2	3352 H9	
	2304 F2	3353 H9	
	2305 I3	3369 E8	
	2306 I4	3370 E8	
B	2307 G2	3400 C8	
	2308 G2	3401 C8	
	2309 E3	3402 D8	
	2310 E3	3404 B9	
	2311 E3	3405 B9	
	2312 H4	3406 C9	
	2313 H5	3407 B8	
	2315 H5	3408 B9	
	2321 G8	3409 B9	
C	2322 G9	3412 B8	
	2323 G8	3413 B8	
	2325 G8	3414 C8	
	2331 F8	3420 E9	
	2340 H8	3421 C2	
	2343 H6	3422 E9	
	2344 H6	3423 E9	
	2351 G10	3424 E10	
	2400 C9	3425 D11	
D	2401 C10	3426 D11	
	2402 B10	3427 E11	
	2403 C5	3428 D8	
	2404 C5	3429 D8	
	2405 C6	3430 D9	
	2406 C3	3431 C4	
	2407 C3	3432 C2	
	2408 D3	3433 C2	
	2410 D3	3434 A4	
	2411 D3	3435 B6	
E	2412 D3	3436 B2	
	2413 B2	3438 C5	
	2414 B2	3439 D8	
	2415 B2	3440 D8	
	2416 B2	3441 D8	
	2417 C2	3442 B5	
	2418 A4	3443 C5	
	2419 A4	3444 C5	
	2422 E9	3451 B5	
F	2423 E9	3452 C5	
	2424 D9	4311 G2	
	2425 C7	4410 D2	
	2426 D8	4420 B6	
	2428 D8	4425 C2	
	2429 C8	4426 H2	
	2430 C9	4427 H2	
	2441 B4	4429 C2	
	2442 B4	5300 E2	
G	3300 E2	5301 F2	
	3302 F3	5302 F2	
	3303 E3	5305 C8	
	3304 E3	5306 C8	
	3306 H3	5307 D8	
	3307 F2	6300 E2	
	3308 F2	6310 I5	
	3309 H4	6311 I4	
	3310 G4	6334 F9	
	3311 H4	6340 H8	
H	3312 H5	6341 H7	
	3313 G5	6344 H6	
	3314 H5	6350 G11	
	3315 H5	6354 H9	
	3316 G5	6420 E8	
	3317 F2	6422 E9	
	3318 G2	6424 E10	
	3320 E8	6429 D8	
	3321 F9	6430 H4	
I	3322 F9	6431 D8	
	3323 F8	6432 C4	
	3325 G8	7300 C7	
	3326 G8	7341 H7	
	3330 F9	7351 H10	

SSP panel


K 7
TXT & CONTROL
LIGHT_SENSOR
K5-99
K1:K6
SERVICE-PINS
SERVICE-DEFAULT
SERVICE-MODE
(N.A)
FROM/TO 0241 OF E
MAINS_CLOCK
STBY_LED
P50_OUT
P2-7
K8-151
TO 7003
DEBUG SOLUTION
DC-PROT
K5-102
SC-PROT
K6-79
LINE
K1-104
STANDBY
K6-40
PROT-DETECT
K6-72
FBCSO
MCS_MPEG
K6-77
P50_IN
K2-26
SOUND-ENABLE
K3-93
RESET-AUDIO
SCAVEM_SW
K6-71
K3-96
K6-70
K3-94
K6-107
K6-108
K6-510
K6-106
VFB
K5-59
VD
K8 or K5-47
CVBS-TXT-OS-OUT
HCSD_PIP
+5V-STBY
+5V-STANDBY
+3V3-STANDBY
PDTC114ET
BC857B
BC847B
BAT254
BAS216
MMBT2369AL
PMBT2369
24C02
RESET
ROM_OE
ROM_CS
K2-301
I2-BUS

3057-C H2	3069 K13	3077 K8	3260 J4	4005 D3	4018 F14	6006 G7	6023 G8	7002 B15	7010 H7	7018 K9
3057-D H2	3070 K16	3078 K8	3261 J3	4008 F3	4802 J3	6008 G4	6025 G9	7003 B11	7011 I8	7019 D5
3059 C6	3071 K16	3080-A I13	3262 K3	4009 D3	5001 K6	6009 G4	6026 G9	7004 J6	7012 D6	7205 K4
3062 K16	3072 L17	3080-B I13	3263 K4	4010 C6	5002 I5	6012 B5	6037 D6	7005 J7	7013 B17	7216 J3
3063 F17	3073 K16	3080-C J13	3866 J3	4012 D3	6001 G6	6013 C9	6038 I4	7006 K16	7014 K16	
3066 D5	3074 K3	3080-D I13	4001 H3	4014 D3	6002 G5	6017 G6	6238 J4	7007 K17	7015 K16	
3067 D5	3075 G9	3081 I13	4002 H3	4016 D4	6003 G7	6019 G6	6250 J4	7008 H9	7016 K16	
3068 E5	3076 H10	3259 J4	4003 I4	4017 E14	6004 G5	6021 G7	7001 F15	7009 J16	7017 K8	



CL 96532101_002.eps
150999

8. Electrical alignments

8.1 General alignment conditions

All electrical alignments should be made under the following conditions:
- Power supply voltage: 220-240V 10%; 50-60 Hz 5%.
- Warm-up time >15 minutes.
- Voltages and oscillograms are measured in relation to tuner earth (with exception to the voltages on the primary side of the power supply). Never use the cooling fins/plates as ground.
- Test probe: Ri > 10 MOHM, Ci < 20 pF.

8.2 Alignments on the Power supply panel

8.2.1 +130Vdc supply voltage

- Connect the positive lead of a voltmeter to the 130Vdc source (at the junction of 5304 and 5305).
- Connect the negative lead to the isolated "cold" ground.
- Using potentiometer R3322 adjust the 130Vdc supply voltage to +130Vdc 0V5.

8.3 Alignments on the Large Signal Panel

8.3.1 High Voltage Adjustment

Exercise extreme cautionwhen adjusting high voltage.
Note:The following test equipment must be used:
High voltage probe
Digital multimeter with 1% (or better) dc accuracy and an input impedance of 10 Megohms 10%.
Initial settings:
- Turn the PTV on.
- Confirm that the 130V source (at the junction of 5304 and 5305) is 130V 0V5.
- Perform the 130Vdc adjustment if the voltage is not within specified limits.
- Select a non-used AUX input for a black picture.
- Turn the PTV off.

With the PTV off and unplugged, connect a Fluke Model 80K-40 (or equivalent) high voltage probe as follows and adjust the high voltage.
1. Connect the ground lead to the chassis ground.
2. Connect the high voltage probe to the digital multimeter.
3. Set the digital multimeter to measure dc volts.
4. Remove one of the CRT anode connections from the high voltage splitter.

Note:Make sure that 3973 is turned fully clockwise.
1. Insert the probe tip into the open CRT anode connection of the high voltage splitter
2. Turn the set on.
3. Adjust 3973, High Voltage Adjust, on the Large Signal Panel for a reading of 30kV 200V.
4. Turn the set off.
5. Remove the high voltage probe.
6. Reinstall the CRT anode connector.
7. Turn the set on and confirm proper operation.

8.3.2 High Voltage Frequency Adjustment

1. Turn the set off and disconnect the ac-input power.
2. Disable the high voltage by shorting the collector of 7952 to ground.
3. Disable the sync input to 7900 by shorting the base of 7952 to ground.
4. Connect a frequency counter to pin 1 of 7900.
5. Turn the set on and adjust 3902 to obtain a reading of 31.25kHz on the frequency counter.
6. Turn the set off and remove the short circuits and the frequency counter.

Note:Some frequency counters may be too sensitive at one attenuation level and not sensitive enough at another. In this case, an oscilloscope may be used. Adjust 3902 to obtain a delay of 63.5S from the leading edge of the first main pulse to the leading edge of the second main pulse.

8.4 Alignments on the small signal panel (SSP)

8.4.1 40.4 MHz neighbour-channel sound trap

- Tune to a checker board test-pattern (system BG - and with a carrier frequency of 475.25 MHz).
- Connect an oscilloscope (trigger line frequent) to pin 19 (CVBS out) of the scart1 connection.
- Align the coil L5103 (diagram K1) completely downwards (see Fig. 8.1).
- Align the coil upwards till under- and overshoot arise at the black/white and white/black transitions in the video signal (Fig. 8.2).
- Align the coil downwards again till above mentioned under- and overshoot is just disappeared.

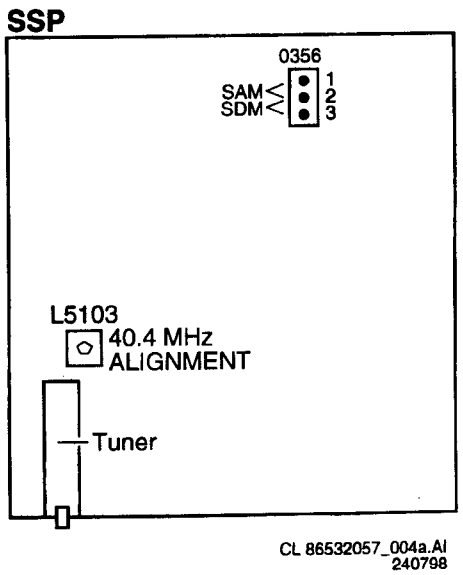


Figure 8-1

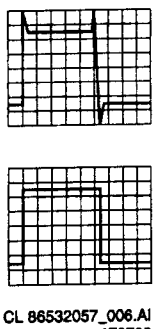


Figure 8-2

8.5 Alignments needing SAM-mode + measuring equipment

(These alignments could be of interest when ICs (7501, TDA9320H), or the EAROM (7008, ST24E16) are exchanged on the SSP.)

8.5.1 'IF AFC' (navigation to this menu item via Alignment --> General --> IF AFC)

- During the 'IF AFC'-parameter adjustment one can see OSD feedback on the screen.
- The OSD feedback can give 4 kind of messages:

AFC-window	AFC-frequency versus reference
Out	High
In	High
In	Low
Out	Low

The first item (in or out) informs you whether you are in or out the AFC-window
The second item (high/low) informs you about whether the AFC-frequency is to high or to low

- First you must align the 'IF AFC'-parameter such that you come into the AFC-window (= 'in')
- Then you must look for the point where the 'IF AFC'-parameter influences the high/low message. This level is the value you are looking for.

Service-tip: If you do not trust the accuracy of the frequency of your Service-generator, first 'measure' with 'Fine tune'-line (manual install-menu) of a good set your Service generator.

8.5.2 'Tuner AGC'

Supply a TV-signal, with a frequency of 475.25 MHz and a signal-strength of about 2 mV. Measure the DC-voltage on pin 1 of the Tuner (position 1102). With the 'Tuner AGC'-alignment in the SAM-menu, this voltage can be aligned. Alignment is correct when DC-voltage is just below 3.8 V

8.6 Alignments and settings in the Service Alignment Menu

8.6.1 General

Entering the SAM can be done in 2 ways:

- Briefly shorting the service pins 'SERVICE ALIGNMENT MODE' on the front side of the SSP (pins 1 and 2 of connector 0356) or:
- Pressing the key on the Dealer Service Tool (DST) (RC7150), followed by keying in the password "3140" and then pressing the key.

The Service Alignment Mode menu will now appear on the screen. The following information is now displayed:

1. The software date ('Date') and version ('ID.') of the ROM (Example: MG51E11.0_01501). (This software-code stands for MG51 (chassis), E for Europe, 1-language, 1.0 software version, xxxxx latest 5 digits of 12nc code software.)
2. The accumulated total of operation hours ('Operation Hours').
3. ('Errors') followed by maximal 10 errors. The most recent error is displayed at the upper left. For explanation errors see chapter 5 (table 5.1).
4. ('Defect. Module'). Here the module that generates the error is displayed. (If there are multiple errors in the buffer that have not all been generated by a single module, there is probably another defect. The message 'Unknown' will then be displayed here).
5. ('Reset Error Buffer'). The error buffer can be reset by pressing the key.
6. ('Functional Test'). All devices are tested via the key. Eventual errors are displayed in the error buffer. The error buffer is not erased, the contents return when the Functional Test is terminated.
7. ('Alignments'). This enables the Alignments sub-menu to be called up.

The following alignments can be selected:
'General':

- 'Drive'
- 'Luminance Delays'
- 'EHT Compensation'
- 'Soft Clipper'
- 'Luma Gain'
- 'IF AFC'
- 'Tuner AGC'
- 'Blend Intensity'
- 'Adjust Peak White Limiter'
- 'Vg2 Test Pattern'
- 'G2 Setup'
- 'AKB'

'Normal Geometry':

- General geometry alignments.

'Super wide geometry': (only valid for widescreen sets)

- Geometry alignments for the 'Super Wide' position in 16:9 sets (only valid for wide screen sets; alignments can be performed, however, it is better to set values as mentioned below).

'Options':

- Setting the initialisation codes in the set via text.

'Option number':

- All options together, expressed in two long numbers. The original factory setting for these numbers can be found on the picture tube sticker on the inside of the set.

'Store':

- Store all alignments.

The alignments are explained now in the sequence of the sub-menu:

8.6.2 General alignments in Service Alignment Menu:

- Once all alignments/settings have been completed the item 'Store' must be selected to record all the values in the permanent memory of the set.
- If the option codes have been changed and stored, the set has to be switched on and off using the mains switch to activate the new settings (when switching on and off via Standby, the option code settings are NOT read by the microprocessor).
- If an empty EAROM (permanent memory) is detected, all settings are set to pre-programmed default (standard) values.
- A built-in test pattern can be called up in various sub-menus. The test pattern generator can be switched on using the item 'Test pattern on/off'. The test pattern only appears AFTER the specific alignment has been selected. The test patterns are generated by the teletext-IC.

'Drive'

1. Remove the Light Barrier in order to view the Main Lens Output from each tube.

Note:Any dust should be removed from the Output Lenses, Mirror and backside of the Screen with a soft cloth.

1. Apply a Black Level video pattern to the antenna input.
2. Turn all the G2 controls counterclockwise.
3. While looking directly into the tubes, set each G2 control to produce a barely visible picture on the CRT.
4. Set "Cathode" to 6.
5. Select "Green" and set the value to 32.

6. Select "Tint" and switch this to normal.
7. Apply a Gray scale pattern to the antenna input.
8. Adjust the Red and Blue drives to obtain the correct Gray scale.
9. Reset the "Tint" to Warm.
10. Add 4 to the value of the "Red" and subtract 7 from the value of the "Blue".
11. Reset "Tint" to Cool.
12. Subtract 3 from the value of the "Red" and add 3 to the value of the "Blue".
13. Return to the "Alignments" menu and "Store" the new settings.

Tint-settings:
In table below an indication of the three tint settings 'Normal',. 'Warm' and 'Cool' is given.

	Cool	Normal	Warm
R	10	13	17
G	32	32	32
B	17	14	7

'Luminance delays'
With the 'Luminance delays' alignment the luminance information is placed on the chrominance information (brightness is pushed onto the colour). Use a colour bar/grey scale pattern as test signal.

- Lum. Delay Pal: Apply a PAL colour bar/grey scale pattern as a test signal. Adjust 'Lum. Delay Pal' until the transients of the colour part and black and white part of the test pattern are at the same position.
- Lum. Delay Secam: Apply a SECAM colour bar/grey scale pattern as a test signal. Adjust 'Lum. Delay Pal' until the transients of the colour part and black and white part of the test pattern are at the same position.
- Lum. Delay Bypass: Apply a NTSC colour bar/grey scale pattern as a test signal. Adjust 'Lum. Delay Bypass' until the transients of the colour part and black and white part of the test pattern are at the same position.

'EHT compensation'
Fixed value: 0

'Soft clipper"
Fixed setting: 'Pwl+0%'

'Luma gain'
Fixed value: 1

'IF AFC'
See chapter 8.5.1. The SAM-mode is needed to make alignment, a test generator to make signal, an oscilloscope to measure at SCART-output and the Install-menu to check fine-tuning-value.

'Tuner AGC'
See chapter 8.5.2. The SAM-mode is needed to make alignment, a test generator to make signal, a DC-Voltmeter to measure at pin 1 of Tuner.

'Blend intensity'
(This alignment could be used when micro controller or HOP-IC has been replaced).
It aligns the level of transparency of the menu-picture blended into the main-picture.

- Position the brightness-, contrast- and colour-setting in the middle-position. (picture-menu).
- Apply a signal with a 100 % white video-pattern
- Connect an oscilloscope to pin 3 of connector 0340 of the CRT panel and measure the Red output level
- Align 'blending intensity'-parameter such that the blended signal is 65 % of the black-white amplitude. Practically this will be about 1.3 V (blended signal) versus 2 V(full white signal).
- The parameter can be adjusted in between 0 and 31.

'Peak White Limiter'
The next value for 'Peak White Limiter' must be entered: 10

'VG2 Test Pattern'
Not aplicable

'G2 Setup'
Not aplicable

'AKB'
Select AKB and switch to "ON".

8.6.3 Geometry alignments 'Normal Geometry' in the Service Alignment Menu

Warning:
At this moment the INTERNAL test pattern of the set will lead to a misaligned geometry of the picture. Please do not use internal test pattern. When using a service generator with a geometry-pattern (e.g. a crosshatch-pattern), the set can be aligned without problems.
Note: First defeat the Convergence drive by shorting the two pins on connector 1033 on the Convergence Panel.
Typical values for the Normal Geometry alignments are:
V Slope36
V. Shift32
V. Amplitude46
V S-Correction12
H. Shift24
H. Amplitude20
East/West Parabola40
East/West Corner13
East/West Trapezium24
Horizontal Parallelogram30

Vertical amplitude and centring
Select 'Test Pattern ON' and set the begin conditions:

- Vertical S-correction value on 12.

The boundary-stripes of the test pattern should be positioned on the edge of the picture tube.

1. Align 'V slope' (when aligning the below half of the picture is blanked). The middle line of the test pattern must be matched with the edge of this blanking/picture transient in the middle of the picture. Pushing button again, gives you previous menu again. (This alignment is meant to align the zero-crossing of the frame-deflection to the mechanical middle of the picture tube.)
2. Align the vertical amplitude using 'V amplitude' so that the test pattern is fully visible.
3. Align the vertical centring using 'V shift' so that the test pattern is located vertically in the middle.
4. If necessary repeat the alignment of 'V amplitude', in order to get 'V shift' OK.

Vertical S correction
Select 'Test pattern on'.
Align the vertical S correction using 'V S-correction' so that the vertical amplitude at the top of the picture is equal to the amplitude in the middle of the picture.

Horizontal centring and amplitude
Select 'Test pattern on'.

1. Using 'H amplitude' align the horizontal amplitude so that the entire test pattern is visible.

2. Use an external test signal, with a centre-reference from a service-generator. Use 'H shift' to align the picture horizontally in the middle.
3. Repeat the 'H amplitude' alignment if necessary.

East/west alignment

Select 'Test pattern on'.

1. Use 'East/West Parabola' to align the vertical lines until straight.
2. Use 'East/West Corner' to align the vertical lines in the corners until straight.
3. Use 'East/West Trapezium' to align for a rectangular.
4. Use 'Horizontal Parallelogram' to align for straight vertical lines if necessary.
5. If necessary select 'East/West Corner' and align as required.
6. Repeat steps 1 to 4 if necessary.

8.6.4 Geometry alignments 'Super wide geometry' in the Service Alignment Menu

Only applicable to 16:9 sets.
Typical values for the Super Wide Geometry alignments are:
V. Shift 32
V. Amplitude 28
V S-Correction 12
H. Correction 18
East/West Prabola 40
The header of this paragraph and also the menu's are misleading. We only need to set the following values, if the normal geometry alignment has been performed correctly.

- Vertical S correction: enter value here of normal geometry.
- East/west parabola: enter value here or normal geometry.

8.7 Option menu

Introduction:
The microprocessor communicates with a large number of I2C-ICs in the set. To ensure good communication and make digital diagnosis possible, the microprocessor has to know which ICs have to be addressed. The presence of specific ICs or functions is made known by means of the option codes.
All options codes can be manipulated using both the option numbers and/or the Option menu.
All hardware related options are incorporated under the heading 'Options' of the 'Alignments' sub-menu of the 'Service Alignment Mode'. All software related options that are incorporated under the heading 'Dealer Options' of the 'Service Alignment Mode", can also be reached directly via the 'button of the DST.

8.8 Options in the Service Alignment Mode

Menu-item	Subjects	Options	Physically in the set
Dual screen/PIP	Aux type	None	
		Video Dual Screen	
		PIP	
	Text dual screen	Yes	Text dual screen present (only valid for 16:9 sets)
		No	Text dual screen not present
Teletext/EPG	TXT	Yes	Teletext present
		No	Teletext not present
	NextView present	Yes	NextView set
		No	NextView not set
	NextView type	Flashram	IC7013 present on SSP (diagram K7)
		No Flashram	IC 7013 not present on SSP (diagram K7)
Communication	Easylink Plus	Yes	Easylink Plus set
		No	Easylink Plus not set
Picture tube	CRT Type	4:3	4:3 picture tube
		16:9	16:9 picture tube
	Picture Rotation (only for 16:9)	Yes	Frame rotation circuitry present on LSP (IC7440 diagram A3)
		No	Frame rotation circuitry not present (IC7440 diagram A3)
	Dynamic Focus	Yes	Dynamic focus picture tube present
		No	Dynamic focus picture tube not present
Video Repro	Feature box type	Eco	IC7606 present on SSP (diagram K5)
		Prozonic	IC7606 and IC7607 present on SSP (diagram K5)
		Falconic	
	Field memories (only with falconic)	2	
		3	
	Lightsensor	Yes	
		No	

Menu-item	Subjects	Options	Physically in the set
	PALplus	Yes	
		No	
	Combfilter	Yes	IC7560 present on SSP (diagram K1)
		No	IC7560 not present on SSP (diagram K1)
	Picture improvement	Yes	
		No	
	Picnic AGC	Yes	In normal operation: Yes
		No	During 'Drive' alignments: No
	Signalling bits	Yes	
		No	
Source Selection	External 3	Yes	3rd EURO connector present
		No	No 3rd EURO connector present
	External 4	Yes	4th EURO connector present
		No	No 4th EURO connector present
Audio Repro	Dolby	None	
		Pro Logic	
		Digital	MCS-module present
	Rear speakers	Corded	
		Virtual	
		Cordless	Active surroundbox present
	Acoustic system	FL7	Applicable for sets with subwoofer
		FL8	Applicable for sets without subwoofer
		FL9	Monitor look
Miscellaneous	Heatsink Present	Yes	Heatsinks present on CRT/Scavem panel (diagram F)
		No	Heatsinks not present on CRT/Scavem panel (diagram F)

8.9 Dealer Options in the Service Alignment Mode

Menu name	Subjects	Options	Physically in set
Picture options	CTI	Yes	CTI enabled
		No	CTI disabled
Personal	Blue Mute	Yes	Blue mute active in case no picture detected
		No	Noise in case of no picture detected
	Virgin Mode	Yes	TV starts up once with language selection menu after mains switch on for the first time (virgin mode)
		No	TV does not starts up once with language selection menu after mains switch on for the first time (virgin mode)
	Auto store mode	None	Autostore mode disabled (not in installation menu)
		PDC-VPS	Autostore mode via ATS (PDC/VPS) enabled
		TXT page	Autostore mode via ACI enabled
		PDC-VPS-TXT	Autostore mode via ACI or ATS enabled
	Demo Mode Enable	Yes	Demo mode enable
		No	Demo mode disable
	Auto TV	Yes	Auto TV mode enabled
		No	Auto TV mode disabled
Teletext	TXT Preference	TOP	Preference to TOP teletext
		FLOF	Preference to FLOF teletext
	East/West TXT	West	TXT characters for non -/58 sets
		East	TXT characters for -/58 sets

- After the option(s) have been changed, they must be stored via the STORE command.
- The new option is only active after the TV is switched off and then back on again using the mains switch (the EAROM is then read out again).

8.10 'Option number'

In case the EAROM has to be replaced, all the options will also require resetting. To be certain that the factory settings are reproduced exactly, both option numbers have to be set. These numbers can be found on a sticker on the picture tube.
Option number 46PP9105 and 55PP9105 is:
00713 12678 04545 00016
12343 00001 00000 00000

8.11 Convergence Alignment

Warm the set up for at least 20 minutes prior to making any Geometry or Convergence adjustments.
Sit directly in front of and at least 2 to 3 meter away from the front of the screen while performing convergence alignments. Also ensure that you are always at eye level with the area of the screen you are adjusting.
Digital Convergence alignments are interactive. A change in one quadrant will affect adjacent areas of the screen. Several passes through the convergence sequence may be necessary.
When performing convergence alignments, it is advised to always follow the sequence pattern when going from one adjustment location to another. Pressing the Cursor Right key will sequence the Icon through the preloaded pattern.
A convergence board severely out of convergence will not necessarily have perfect Icon shapes.
A Complete in-depth Convergence will be required if the Convergence module or Convergence Memory IC has been replaced.
The correct signal for the mode being adjusted must be applied to the set when performing Geometry or Convergence alignments. Convergence alignments must be performed twice, one time for an NTSC signal, and then for PAL or SECAM. The NTSC signal can only be applied through the External inputs.

8.11.1 Screen centering

1. Apply a PAL, SECAM, or NTSC signal to the set (NTSC Signal can only be applied to the External inputs).
2. Put the picture in the 16:9 mode.
3. Selesct the "Convergence Mode" in the alignment menu.
4. Select "Convergence Selection" in the Convergence menu.
5. Select "Green" in the Convergence Selection Menu.
6. Defeat the Convergence drive by shorting the two Pins on connector 1033 located on the Convergence panel.
7. Place the Convergence Template over the screen.
   - 46": 3122 785 90002
   - 55": 3122 785 90003
8. Using the Centering rings on the Green CRT, center the convergence pattern onto the center point of the Convergence Template.
9. Return to the Convergence Selection menu.
10. Select "Red to Green" in the service menu.
11. Center the Red pattern onto the Green pattern for each quadrant of the screen.
12. Return to the Convergence Select Menu.
13. Select "Blue to Green" in the service menu.
14. Center the Blue pattern onto the Green pattern.
15. Remove the jumper from connector 1033.
16. Return to the Convergence Selection
17. Menu.

8.11.2 Green Geometry

Green Geometry
1. Make sure the set is placed in 16:9 mode. Ensure that the proper signal (PAL, SECAM, or NTSC) for the mode being tested is applied to the set.
2. Perform the procedure for PAL or SECAM, repeating the convergence procedure for NTSC will then be required.

Note: Do not repeat Screen Centering. It is necessary to perform Screen Centering for one mode only.
1. Select "Convergence Selection" in the Convergence Mode Menu.
2. Select "Green" in the "Convergence Selection" Menu.
3. Press the "OK" button on the DST or the Menu Select button on the consumer remote to adjust the Icon.

Note:Move the Icon toward the adjustment point on the Template for no more than 4 seconds in any direction.
1. When you are satisfied with the current location of the Icon, press the "OK" button or the Menu Select button.
2. Then press the Cursor Right Button or Outer Menu Ring to the right to move the Icon to the next adjustment point.

Note:This adjustment is highly interactive. Therefore it is advised to follow the pattern programmed into the set by pressing the Outer Menu Ring toward the right. However when performing minor touch up adjustments, it is possible to move the Icon up, down, right or left by pressing the Outer Menu Ring in that direction, until the Icon is positioned in the area requiring adjustment.
1. Follow the pattern and make corrections until the Convergence Crosshatch pattern matches the pattern on the screen template.
2. Remove the screen template.

8.11.3 Red Convergence

Red Convergence
1. Select "Red to Green" in the Convergence Selection menu.
2. Adjust the Red crosshatch pattern onto the green pattern in the same manner that the Green was adjusted to the template.

8.11.4 Blue Convergenge

Blue Convergence
Select "Blue to Green in the Convergence Serlection menu. Adjust the Blue crosshatch pattern onto the green pattern in the same manner that the Red was adjusted to the Green.

8.11.5 Focus/White balance

Focus/White Balance
1. Set the Picture, Sharpness, Brightness and Tint (NTSC) to their midrange position.
2. Set Color to minimum.

8.11.6 Electrical Focus

Electrical Focus
1. Connect a crosshatch pattern to the antenna input.
2. Cover the screen with a dark cloth.
3. Cover two of the CRT's Output Lenses with an 18-cm x 18-cm piece of cardboard.
4. Observe the magnified reflections of the individual picture tubes on the backside of the viewing screen.
5. Adjust the respective Focus control (top row of the HV/ Focus distribution block) for optimum mid-screen focus.
6. Confirm the correct focus by viewing the screen from the front of the unit.
7. Repeat steps 2 through 6 to focus the remaining two CRT's.

8.11.7 Mechanical Focus

Mechanical Focus
1. As with Electrical Focus, connect a crosshatch pattern to the antenna input.
2. Cover the screen with a dark cloth.

3. Cover two of the CRT's Output Lenses with an 18-cm x 18-cm piece of cardboard.
4. Carefully loosen the lens retaining wing nuts on the CRT output lens.
5. Move the Wing nut post in the slot to obtain optimum focus while viewing the screen from the rear of the set.
6. Tighten the wing nut.
7. Confirm correct focus by viewing the screen from the front of the unit.
8. Repeat steps 2 through 7 for the two remaining Output Lenses.

9. Circuit description

For the circuit description see Training Manual MG5.1E (3122 785 10053)

9.1 List of abbreviations

uC	Micro Computer
2CS	Two Carrier System stereo
2fcs	2 x colour subcarrier frequency
3,58	Colour subcarrier frequency (3.58 MHz)
4,43	Colour subcarrier frequency (4.43 MHz)
AF	Sound IF signal from sound IF detector
AFC	Automatic Frequency Control
AFT	Automatic Fine Tuning
AGC	Automatic Gain Control
Aquadag	Earth from the CRT-tube
Audio/CVBS	Sound IF signal (Intercarrier sound)
AV	Audio/Video
AVS	Automatic Voltage Switching
BCI	Beam Current Info
BG/I/DK/MN	IF Sound systems BG/I/DK/MN
BL	Beam Current limitation
BS	Broadcasting satellite
BTSC	Broadcast Television System Committee (L-R and L+R)
C	Chrominance
C-out	Chroma out
CRT	Picture Tube
CTI	Colour Transient Improvement
CVBS	Colour Video Blanking Sync
CVBS-PIP	CVBS for PIP panel
CVBS-Y	CVBS for luminance signal
DAC	Digital Analogue Converter
DC	Direct Current
East/west	East/west Correction signal
EEPROM	Electrical Erasable and Programmable Read Only Memory
EHT	Extra High Tension (25kV)
EN	Enable
EXT	External inputs (audio and video cinches)
FB	Fast blanking
Flyback	Flyback signal
FM	Frequency Modulation
Frame drive	Frame drive
Geometry	Geometry signal for 60Hz frame
H-shift	Horizontal-shift
Heater	Heater current for filement
HOR	Horizontal
HUE	Tint adjustment for NTSC system
I/O-expander	Input/Output expander
I-deg	Degaussing current
I2C	Inter IC data bus
IDENT	Identification signal from synchronisation IC
IF	Intermediate Frequency
Int-CVBS	Internal CVBS signal
INT-L	Internal audio L
INT-R	Internal audio R
L-in	Left audio in
L-out	Left audio out
LED	Light Emitting Diode
Line drive	Line drive
Line prot	Line protection signal
LOT	Line Output Transformer
LSP	Large Signal Panel
MHz	Mega Hertz
MPX	Multiplexed BTSC signal
NICAM	Near Instantaneous Companding Audio Multiplex
NIL	Non Interlace
NILS	Non Interlace Signal
NTSC	National Television System Committee
OSD	On Screen Display (in diagrams Display On Screen)
PAL	Phase Alternating Line
PIP	Picture In Picture
PLL	Phase Locked Loop
POR	Power On Reset
PP	Personal Preference
Prot	Protection signal
PTC	Positive Temperature Coefficient (increasing resistance at increasing temperature)
PWM	Pulse Width Modulation
QPSK	Quadrature Phase Shift Keying
R-in	Right audio in
R-out	Right audio out
RAM	Random Access Memory
RC5	Remote Control 5 system
REF	Reference
RGB	Red Green Blue
ROM	Read Only Memory
SAP	Second Audio Program
SAP_AVAIL	Status signal; pulled "low" by BTSC panel, SAP is available
SAW	Surface Acoustic Wave
SC	Sand Castle signal
SCL	Clock of the I2C-bus
SDA	Data if the I2C-bus
SDM	Service Default Mode
SECAM	Sequential Couleur a Memoire
Sif	Sound IF signal front end tuner
SM	Service Mode
SMPS	Switched Mode Power Supply (frequency and duty cycle controlled)
SQ	Squeeze mode
SSP	Small Signal Panel
Std-by	Stand by
SVHS	Super Video Home System
SYNC	Synchronisation
TINT	PWM control signal for hue control
TP1	Test Point 1
TRANS_ID	Status signal
TXT	Teletext
U	R-Y

V	B-Y	4:3	Aspect Ratio of Picture Tube (4 equals height, 3 equals width)
VERT	Vertical		
Vfb	Vertical feedback voltage	16:9	Aspect Ratio of Picture Tube (16 equals height, 9 equals width)
VG1	VG1 Voltage		
VG2	VG2 Voltage	14:9	Aspect Ratio of Picture Tube (14 equals height, 9 equals width)
Vref	V-Reference		
Y	Luminance part of the video signal		

9.2 Optical assembly replacement

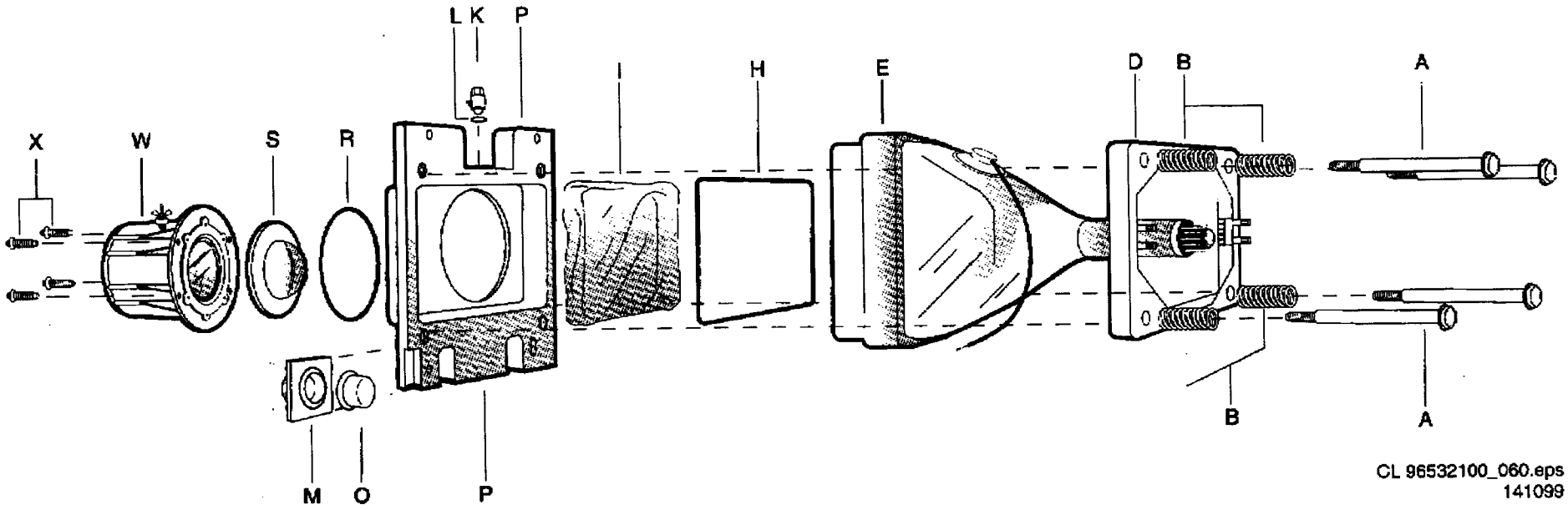


Figure 9-1

For optical assembly replacement parts see Spare parts list at the end of this manual.

10. Spare parts list

Power Supply Panel

Various

0103	3135 011 02331	Clip for transsistor
0104	3135 010 02911	Insulator
0104	3135 011 02331	Clip for transsistor
0301	3135 010 02911	Insulator
0301	3135 011 01511	Spring
0320	3135 014 09181	Support
0600	3135 011 02331	Clip for transsistor
1000	4822 253 30474	Fuse 5A
1004	2422 093 00027	Fuse 1A
1202	2422 025 16081	11P board
1203	2422 025 15914	4P board
1205	4822 265 11507	4P
1210	2422 025 15516	9P board
1212	4822 267 10889	6P male
1220	4822 267 10966	2P
1221	4822 267 10966	2P
1222	4822 267 10966	2P
1223	4822 267 10973	1P
1224	4822 267 10973	1P
1225	4822 267 10973	1P
1276	4822 265 11518	10P male v
1300	2422 093 00031	Fuse 2A
1301	2422 086 10786	Fuse 4A
1302	2422 086 10786	Fuse 4A
1305	2422 132 07314	Relay

⊣⊢

2000	4822 121 43819	0.68µF 10% 250V
2001	4822 121 43819	0.68µF 10% 250V
2002	2020 554 90173	2.2nF 20% 250V
2003	2020 554 90173	2.2nF 20% 250V
2004	4822 252 60151	Surge prot. DSP-501N-A21F
2005	4822 121 10512	275V 220nF 20%
2006	2020 558 90557	1nF 10% 1KV
2007	2020 558 90557	1nF 10% 1KV
2008	2020 558 90557	1nF 10% 1KV
2009	2020 558 90557	1nF 10% 1KV
2104	4822 121 10512	275V 220nF 20%
2105	4822 122 50116	470pF 10% 1KV
2107	4822 126 11382	1nF 10% 1KV
2108	4822 126 11382	1nF 10% 1KV
2109	4822 122 50116	470pF 10% 1KV
2110	2020 021 91323	470µF 20% 400V
2111	2222 479 90014	220nF 5% 250V
2112	4822 121 42868	220nF 5% 50V
2113	4822 124 40255	100µF 20% 63V
2114	4822 121 42729	1.5nF 1% 250V
2115	2020 308 90121	330pF 5% 50V
2116	4822 121 70654	2.2nF 10% 50V
2117	5322 124 41381	22µF 20% 50V
2118	4822 124 21913	1µF 20% 63V
2119	4822 121 10711	100nF 20% 275V
2119	4835 121 47646	2200pF 5% 50V
2120	4822 126 13337	220pF 10% 1KV
2203	2020 554 90173	2.2nF 20% 250V
2206	4822 124 80144	220µF 20% 25V
2208	4822 122 31211	100pF 10% 500V
2209	4822 124 40207	100µF 20% 25V
2213	4822 124 81144	1000µF 16V
2214	4822 124 11508	22µF 20% 250V
2215	4822 124 11508	22µF 20% 250V
2226	4822 122 30103	22nF 80% 63V
2228	4822 122 31211	100pF 10% 500V
2269	4822 122 31211	100pF 10% 500V
2270	4822 124 40207	100µF 20% 25V
2282	4822 124 22651	1.0µF 20% 50V
2283	4822 124 40433	47µF 20% 25V
2284	4822 122 30043	10nF 80% 63V
2285	4822 122 30043	10nF 80% 63V
2300	2020 021 91323	470µF 20% 400V
2301	4822 126 11382	1nF 10% 1KV
2302	4822 122 50116	470pF 10% 1KV
2303	4822 124 40207	100µF 20% 25V
2304	2020 558 90554	330pF 10% 1KV
2305	5322 122 32311	470pF 10% 100V
2306	4822 124 21913	1µF 20% 63V
2307	5322 122 32261	4.7nF 10% 100V
2308	5322 122 32261	4.7nF 10% 100V
2309	4822 122 31237	82pF 2% 100V
2310	4822 126 13461	680pF 10% 50V
2311	5322 122 32331	1nF 10% 100V
2312	4822 122 50116	470pF 10% 1KV
2313	2020 021 91321	470µF 20% 200V
2314	4822 124 11508	22µF 20% 250V
2315	4822 122 50116	470pF 10% 1KV
2316	3198 026 51020	1000µF 20% 50V
2317	3198 026 51020	1000µF 20% 50V
2318	5322 121 42386	100nF 5% 63V
2319	4822 122 50116	470pF 10% 1KV
2320	3198 026 51020	1000µF 20% 50V
2321	3198 026 51020	1000µF 20% 50V
2322	5322 121 42386	100nF 5% 63V
2323	4822 122 50116	470pF 10% 1KV
2324	2020 021 91374	22000µF 20% 25V
2325	5322 121 42386	100nF 5% 63V
2326	5322 121 42386	100nF 5% 63V
2327	2020 021 91376	470µF 20% 35V
2328	4822 124 21913	1µF 20% 63V
2329	4822 122 50116	470pF 10% 1KV
2330	2020 021 91376	470µF 20% 35V
2331	5322 121 42386	100nF 5% 63V
2332	5322 121 42386	100nF 5% 63V
2333	5322 122 32818	2.2nF 10% 100V
2334	5322 121 42489	33nF 5% 250V
2335	4822 124 81151	22µF 50V
2336	5322 121 42386	100nF 5% 63V
2337	4822 124 81151	22µF 50V
2338	4822 124 80061	1000µF 20% 25V
2339	5322 121 42386	100nF 5% 63V
2340	4822 122 30043	10nF 80% 63V
2341	5322 121 42386	100nF 5% 63V
2342	5322 122 32311	470pF 10% 100V
2343	5322 122 32331	1nF 10% 100V
2344	4822 124 80061	1000µF 20% 25V
2345	4822 122 30043	10nF 80% 63V
2346	5322 121 42386	100nF 5% 63V
2347	4822 124 21913	1µF 20% 63V
2348	4822 124 21913	1µF 20% 63V
2349	4822 122 30043	10nF 80% 63V
2350	4822 122 50116	470pF 10% 1KV
2351	4822 122 30103	22nF 80% 63V
2352	4822 124 80061	1000µF 20% 25V
2353	5322 122 32334	220pF 10% 100V
2354	4822 124 40433	47µF 20% 25V
2355	5322 122 32311	470pF 10% 100V
2356	2020 021 91376	470µF 20% 35V

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3000	4822 053 21475	4M7 5% 0.5W
3001	4822 053 21475	4M7 5% 0.5W
3003	4822 117 12181	470Ω 20% 0.5W
3004	4822 053 20335	3M3 5% 0.25W
3005	4822 053 20335	3M3 5% 0.25W
3006	4822 116 52285	470k 5% 0.5W
3007	4822 116 83961	6k8 5%
3008	4822 050 21003	10k 1% 0.6W
3009	2322 253 41228	2.2Ω 5% 10W
3011	4822 116 21217	VDR 1mA/423V 800V
3105	2120 106 90522	6.8Ω 5% 2W
3107	4822 053 10689	68Ω 5% 1W
3108	4822 053 21335	3M3 5% 0.5W
3109	4822 116 83884	47k 5% 0.5W
3110	4822 116 83882	39k 5% 0.5W
3111	4822 117 10118	1M 5% 0.5W
3112	4822 053 21225	2M2 5% 0.5W
3113	4822 116 52245	150k 5% 0.5W
3114	4822 116 52195	47Ω 5% 0.5W
3115	4822 116 52195	47Ω 5% 0.5W
3116	4822 050 26803	68k 1% 0.6W
3117	4822 050 21003	10k 1% 0.6W
3118	4822 116 83881	390Ω 5% 0.5W
3119	4822 053 21335	3M3 5% 0.5W
3120	4822 116 52289	5k6 5% 0.5W
3121	4822 116 52264	27k 5% 0.5W
3123	4822 116 52249	1k8 5% 0.5W
3124	4822 116 52272	330k 5% 0.5W
3125	4822 050 11002	1k 1% 0.4W
3126	4822 116 83884	47k 5% 0.5W
3127	4822 116 52251	18k 5% 0.5W
3128	4822 116 52249	1k8 5% 0.5W
3130	2120 106 90565	0.1Ω 5% 2W
3131	2120 106 90565	0.1Ω 5% 2W
3132	2120 106 90565	0.1Ω 5% 2W
3133	2120 106 90565	0.1Ω 5% 2W
3134	4822 053 21474	470k 5% 0.5W
3212	4822 050 21003	10k 1% 0.6W
3213	4822 050 21003	10k 1% 0.6W
3214	4822 116 52234	100k 5% 0.5W
3215	4822 050 11002	1k 1% 0.4W
3216	4822 052 10109	10Ω 5% 0.33W
3223	4822 116 52195	47Ω 5% 0.5W
3239	4822 050 22402	2k4 1% 0.6W
3241	4822 116 83961	6k8 5%
3244	4822 050 23303	33k 1% 0.6W
3246	4822 050 22402	2k4 1% 0.6W
3247	4822 116 52213	180Ω 5% 0.5W
3287	4822 116 83883	470Ω 5% 0.5W
3288	4822 050 21003	10k 1% 0.6W
3289	4822 050 21003	10k 1% 0.6W
3300	4822 117 12076	22k 5% 5W
3301	2322 257 41102	1k 5% 5W
3302	2322 257 41102	1k 5% 5W
3303	4822 116 52234	100k 5% 0.5W
3304	4822 050 11002	1k 1% 0.4W
3305	4822 050 21003	10k 1% 0.6W
3306	4822 116 52176	10Ω 5% 0.5W
3307	4822 116 52191	33Ω 5% 0.5W
3308	3198 012 21070	0.1Ω 5% 2W
3309	3198 012 14770	0.47Ω 5% 1W
3310	4822 116 83883	470Ω 5% 0.5W
3311	4822 050 24708	4.7Ω 1% 0.6W
3312	4822 116 52201	75Ω 5% 0.5W
3313	4822 050 21003	10k 1% 0.6W
3314	4822 116 52304	82k 5% 0.5W
3315	4822 116 52244	15k 5% 0.5W
3316	4822 050 11002	1k 1% 0.4W
3317	4822 116 52244	15k 5% 0.5W
3318	4822 116 52245	150k 5% 0.5W
3319	4822 116 52244	15k 5% 0.5W
3322	4822 101 11383	470Ω 30% LIN
3323	2120 105 93474	2.7k.5% 1W
3324	3198 012 11040	100k 5% 1W
3325	4822 050 21003	10k 1% 0.6W
3326	4822 116 52283	4k7 5% 0.5W
3327	4822 116 52175	100Ω 5% 0.5W
3328	4822 116 52175	100Ω 5% 0.5W
3329	4822 116 52219	330Ω 5% 0.5W
3330	4822 053 10223	22k 5% 1W
3331	4822 053 10223	22k 5% 1W
3332	4822 052 10108	1Ω 5% 0.33W
3333	3198 012 21070	0.1Ω 5% 2W
3334	4822 050 11002	1k 1% 0.4W
3335	4822 116 52234	100k 5% 0.5W
3336	4822 116 52175	100Ω 5% 0.5W
3337	4822 116 83881	390Ω 5% 0.5W
3338	4822 050 21003	10k 1% 0.6W
3339	4822 116 52269	3k3 5% 0.5W
3340	4822 116 83874	220k 5% 0.5W
3341	3198 012 23390	0.33Ω 5% 2W
3342	3198 012 23390	0.33Ω 5% 2W
3343	4822 050 21003	10k 1% 0.6W
3344	4822 050 21003	10k 1% 0.6W
3345	2322 251 41471	470Ω 5% 5W
3346	2322 251 41471	470Ω 5% 5W
3347	4822 116 52283	4k7 5% 0.5W
3350	3198 012 14730	47k 5% 1W

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5000	3121 218 61371	Transformer
5001	3121 218 61491	Transformer
5211	4822 157 50964	100µH
5214	4822 157 50964	100µH
5233	4822 157 11411	Bead 100MHz
5234	4822 157 71736	10µH 5%
5235	4822 157 71736	10µH 5%
5301	4822 157 11411	Bead 100MHz
5302	4822 157 11411	Bead 100MHz
5303	4822 157 11411	Bead 100MHz
5304	4822 157 11411	Bead 100MHz
5305	4822 157 71736	10µH 5%
5306	4822 157 11411	Bead 100MHz
5307	4822 157 71736	10µH 5%
5308	4822 157 11411	Bead 100MHz
5309	4822 157 71736	10µH 5%
5310	4822 157 11411	Bead 100MHz
5311	4822 157 71736	10µH 5%
5312	4822 157 71736	10µH 5%
5313	4822 157 11411	Bead 100MHz
5314	4822 157 71736	10µH 5%
5315	4822 157 71736	10µH 5%

5316	4822 157 71736	10µH 5%
5317	4822 157 71736	10µH 5%

6001	4822 130 83147	DF06M
6103	4835 130 37491	MUR860
6104	4822 130 30842	BAV21
6204	4822 130 42488	BYD33D
6205	4822 209 81397	TL431CLPST
6207	4822 130 42488	BYD33D
6231	4822 130 32245	BYV10-40
6301	4822 130 42606	BYD33J
6302	5322 130 31938	BYV27-200
6303	5322 130 31938	BYV27-200
6304	4822 130 42488	BYD33D
6306	4822 130 10218	BY229X-800
6307	4822 130 10218	BY229X-800
6308	4822 130 10218	BY229X-800
6309	5322 130 31938	BYV27-200
6311	4822 130 42488	BYD33D
6312	4822 130 83865	SB360
6313	4822 130 30621	1N4148
6314	4822 130 32896	BYD33M
6315	4822 130 32896	BYD33M

7000	4822 130 40959	BC547B
7102	4822 209 16121	L4981A
7104	4822 130 10745	STW15NA50
7204	4822 130 44283	BC636
7205	4822 130 40959	BC547B
7206	4822 130 91451	CQY80NG
7211	4822 209 17276	TOP221P
7213	4822 130 91451	CQY80NG
7214	4822 130 40959	BC547B
7300	4822 130 40959	BC547B
7302	4822 209 15684	MC44603AP
7303	4822 130 91451	CQY80NG
7304	4822 209 81397	TL431CLPST
7305	4822 209 11079	MC79M05CT
7306	4822 209 90281	L78M08CP
7307	4822 209 60059	NJM2360D
7309	4822 130 40959	BC547B

High Voltage Scan Module

Various

	3135 011 02331	Clip for transistor
	3135 011 02621	Spring
1501	2422 025 16153	4P
1502	2422 025 16153	4P
1503	2422 025 16153	4P
1504	2422 025 14409	3P
1505	4822 265 11507	4P
1506	4822 267 10973	1P
1507	4822 267 10888	5P male
1508	4822 267 31673	3P male v 2.5
1509	2422 025 15516	9P
1511	4822 267 10933	7P male
1512	4822 267 10889	6P male
1582	4822 265 11507	4P
1590	3121 218 60362	EHT res/cap
1800	4822 071 51002	Fuse 1A
1801	4822 071 51002	Fuse 1A
LEAD	3135 010 01351	Highvoltage cable

2452	2020 012 92648	2.2µF 20% 50V
2501	4822 121 51252	470nF 5% 63V
2503	5322 122 32052	680pF 10% 100V
2511	5322 121 42386	100nF 5% 63V
2557	4822 124 40255	100µF 20% 63V
2558	2222 347 90235	68nF 10% 100V
2559	5322 121 42386	100nF 5% 63V
2564	5322 126 10511	1nF 5% 50V
2565	5322 121 42386	100nF 5% 63V
2567	5322 122 32268	470pF 10% 50V
2570	5322 122 32268	470pF 10% 50V
2571	5322 126 10511	1nF 5% 50V
2573	5322 122 32311	470pF 10% 100V
2574	5322 121 42498	680nF 5% 63V
2586	5322 121 42386	100nF 5% 63V
2608	4822 126 13185	680pF 10% 500V
2800	4822 124 21913	1µF 20% 63V
2801	5322 121 42386	100nF 5% 63V
2804	4822 124 40248	10µF 20% 63V
2805	4822 121 51473	470nF 20% 63V
2806	4822 122 31175	1nF 10% 500V
2807	4822 126 13838	100nF 50V 20%
2808	5322 122 31863	330pF 5% 63V
2809	4822 121 51473	470nF 20% 63V
2810	2020 024 90586	330µF 20% 200V
2811	4822 126 13864	330pF 10% 2KV
2814	2020 024 90587	68µF 20% 400V
2815	4822 122 31175	1nF 10% 500V
2817	2222 375 90141	3.3nF 5% 1.6KV
2818	4822 126 11503	820pF 10% 2KV
2819	4822 121 10551	27nF 5% 630V.
2820	4822 121 42035	4.7µF 10% 100V
2822	2222 479 90022	430nF 5% 250V
2824	2020 558 90555	470pF 10% 1KV
2825	2020 558 90555	470pF 10% 1KV
2826	4822 124 81144	1000µF 16V
2827	4822 124 81144	1000µF 16V
2836	2020 558 90557	1nF 10% 1KV
2837	4822 124 40248	10µF 20% 63V
2838	2020 558 90557	1nF 10% 1KV
2839	2022 333 00119	10nF 5% 1.6KV
2850	2020 558 90555	470pF 10% 1KV
2851	4822 124 40255	100µF 20% 63V
2898	2020 021 91429	1500µF 20% 35V
2899	5322 121 44356	4.7nF 5% 2KV
2900	4822 124 80144	220µF 20% 25V
2901	5322 122 31865	1.5nF 10% 63V
2902	5322 122 31647	1nF 10% 63V
2903	4822 124 21913	1µF 20% 63V
2904	4822 122 33177	10nF 20% 50V
2905	4822 126 14585	100nF 10% 50V
2906	4822 122 33177	10nF 20% 50V
2907	4822 121 51305	15nF 10% 50V
2908	4822 126 13486	15pF 2% 63V
2910	4822 121 51473	470nF 20% 63V
2911	4822 124 40769	4.7µF 20% 100V
2912	4822 124 40248	10µF 20% 63V
2913	4822 124 81144	1000µF 16V
2914	2020 024 90586	330µF 20% 200V
2915	2222 375 90143	3.9nF 5% 1.6KV
2916	4822 121 70642	6.8nF 1600V
2917	4822 121 51473	470nF 20% 63V
2918	4822 124 22652	2.2µF 20% 50V
2919	5322 121 42386	100nF 5% 63V
2920	4822 124 40769	4.7µF 20% 100V
2921	4822 124 80144	220µF 20% 25V
2922	4822 124 11767	470µF 20% 25V
2923	5322 122 31647	1nF 10% 63V
2924	4822 126 11503	820pF 10% 2KV
2926	4822 124 40248	10µF 20% 63V
2927	4822 124 21913	1µF 20% 63V
2928	4822 121 70619	22nF 10% 50V
2929	4822 126 13597	330pF 10% 500V
2930	4822 122 31173	220pF 10% 500V
2932	4822 126 13838	100nF 20% 50V
2933	4822 126 13597	330pF 10% 500V

3452	4822 051 20478	4Ω7 5% 0.1W
3453	4822 051 20478	4Ω7 5% 0.1W
3454	4822 051 20478	4Ω7 5% 0.1W
3455	4822 051 20478	4Ω7 5% 0.1W
3456	4822 051 20471	470Ω 5% 0.1W
3457	4822 117 11449	2k2 1% 0.1W
3458	4822 117 11449	2k2 1% 0.1W
3500	4822 116 52283	4k7 5% 0.5W
3501	4822 050 21003	10k 1% 0.6W
3503	4822 051 20124	120k 5% 0.1W
3504	4822 051 20124	120k 5% 0.1W
3505	4822 116 83872	220Ω 5% 0.5W
3506	4822 051 20124	120k 5% 0.1W
3507	4822 116 52269	3k3 5% 0.5W
3508	4822 116 52276	3k9 5% 0.5W
3510	4822 116 52285	470k 5% 0.5W
3511	4822 116 83884	47k 5% 0.5W
3512	4822 050 21003	10k 1% 0.6W
3513	4822 116 83882	39k 5% 0.5W
3514	4822 050 21003	10k 1% 0.6W
3550	2120 108 92618	1k8 1% 0805
3551	2120 108 92618	1k8 1% 0805
3558	4822 116 52175	100Ω 5% 0.5W
3562	4822 053 10478	4Ω7 5% 1W
3563	4822 053 10221	220Ω 5% 1W
3565	4822 053 10221	220Ω 5% 1W
3571	4822 117 11383	12k 1% 0.1W
3572	4822 116 52175	100Ω 5% 0.5W
3573	4822 116 52175	100Ω 5% 0.5W
3581	4822 117 11449	2k2 1% 0.1W
3584	4822 117 13628	1Ω0 5% 3W
3585	4822 050 21003	10k 1% 0.6W
3590	4822 051 20393	39k 5% 0.1W
3591	4822 117 11449	2k2 1% 0.1W
3592	4822 117 13577	330Ω 1% 1.25W 0805
3593	4822 051 10102	1k 2% 0.25W
3594	4822 116 52175	100Ω 5% 0.5W
3595	4822 050 23303	33k 1% 0.6W
3800	2120 105 90222	1k5 1% 1W
3801	4822 116 52264	27k 5% 0.5W
3802	4822 050 26803	68k 1% 0.6W
3803	4822 052 10101	100Ω 5% 0.33W
3805	4822 053 10101	100Ω 5% 1W
3806	4822 053 10102	1k 5% 1W
3807	4822 116 52219	330Ω 5% 0.5W
3808	3198 012 14720	4.7k 5% 1W
3809	4822 116 52219	330Ω 5% 0.5W
3810	4822 117 12473	4k7 5% 5W
3811	4822 117 12473	4k7 5% 5W
3812	4822 116 52245	150k 5% 0.5W
3813	2120 106 90504	1Ω 5% 2W
3814	4822 051 20339	33Ω 5% 0.1W
3815	4822 116 81832	0.27Ω 5% 0.5W
3816	4822 050 26803	68k 1% 0.6W
3817	4822 116 83883	470Ω 5% 0.5W
3821	4822 053 10471	470Ω 5% 1W
3822	4822 053 10221	220Ω 5% 1W
3823	4822 050 26803	68k 1% 0.6W
3824	4822 053 10221	220Ω 5% 1W
3825	4822 050 26803	68k 1% 0.6W
3826	4822 053 10221	220Ω 5% 1W
3828	4822 050 26803	68k 1% 0.6W
3829	4822 116 52182	15Ω 5% 0.5W
3830	4822 053 10471	470Ω 5% 1W
3831	4822 051 20683	68k 5% 0.1W
3832	4822 051 20332	3k3 5% 0.1W
3833	4822 051 20101	100Ω 5% 0.1W
3834	4822 052 10108	1Ω 5% 0.33W
3835	4822 117 12955	2k7 1% 0.1W 0805
3836	4822 116 83876	270Ω 5% 0.5W
3837	4822 116 52238	12k 5% 0.5W
3838	4822 116 52249	1k8 5% 0.5W
3839	2322 195 63304	300k 5% 3W
3840	4822 117 10118	1M 5% 0.5W
3841	3198 012 14720	4.7k. 5% 1W
3865	2120 106 90282	0.47Ω 5% 1W
3866	4822 116 52251	18k 5% 0.5W
3867	4822 052 10108	1Ω 5% 0.33W
3890	4822 051 20101	100Ω 5% 0.1W
3900	4822 053 10221	220Ω 5% 1W
3901	4822 100 12157	10k 30%
3902	4822 116 52238	12k 5% 0.5W
3904	4822 050 11002	1k 1% 0.4W
3905	4822 051 20124	120k 5% 0.1W
3906	4822 116 52243	1k5 5% 0.5W
3907	4822 116 52289	5k6 5% 0.5W
3908	4822 116 52243	1k5 5% 0.5W
3909	4822 116 52213	180Ω 5% 0.5W
3910	4822 050 21003	10k 1% 0.6W
3911	4822 116 52182	15Ω 5% 0.5W
3912	4822 050 21003	10k 1% 0.6W
3913	4822 116 52283	4k7 5% 0.5W
3914	4822 117 10833	10k 1% 0.1W
3915	4822 116 52231	820Ω 5% 0.5W
3916	4822 051 10102	1k 2% 0.25W
3917	4822 117 11635	1k 10% 0.5W
3918	4822 116 52244	15k 5% 0.5W
3919	4822 116 52243	1k5 5% 0.5W
3920	4822 050 11002	1k 1% 0.4W
3921	4822 116 52251	18k 5% 0.5W
3922	4822 116 52243	1k5 5% 0.5W
3923	3198 012 16820	6.8k 5% 1W
3924	4822 116 52213	180Ω 5% 0.5W
3926	4822 116 52175	100Ω 5% 0.5W
3927	4822 050 21003	10k 1% 0.6W
3928	4822 116 52249	1k8 5% 0.5W
3932	4822 116 52289	5k6 5% 0.5W
3933	4822 051 20105	1M 5% 0.1W
3934	4822 116 81832	0.27Ω 5% 0.5W
3935	4822 116 52219	330Ω 5% 0.5W
3938	2122 254 00476	30Ω 10% 15W
3939	4822 116 52256	2k2 5% 0.5W
3940	4822 050 21503	15k 1% 0.6W
3941	4822 116 52291	56k 5% 0.5W
3942	4822 116 52234	100k 5% 0.5W
3943	4822 100 12155	2k2 30%
3944	4822 116 52206	120Ω 5% 0.5W
3945	4822 051 20684	680k 5% 0.1W

3946	4822 116 83933	15k 1% 0.1W
3948	4822 050 11002	1k 1% 0.4W
3949	4822 116 52226	560Ω 5% 0.5W
3950	2322 251 41339	33Ω 5% 5W
3951	4822 117 10833	10k 1% 0.1W
3952	4822 116 52176	10Ω 5% 0.5W
3954	4822 116 83882	39k 5% 0.5W
3955	4822 053 10333	33k 5% 1W
3957	4822 116 52243	1k5 5% 0.5W
3959	4822 050 11002	1k 1% 0.4W
3960	4822 052 10101	100Ω 5% 0.33W
3961	4822 053 10689	68Ω 5% 1W
3962	4822 116 52175	100Ω 5% 0.5W
3963	4822 116 52219	330Ω 5% 0.5W
3964	4822 116 52176	10Ω 5% 0.5W
3965	4822 116 83866	1M 5% 0.5W
3967	4822 051 20471	470Ω 5% 0.1W
3968	4822 116 52257	22k 5% 0.5W
3969	4822 116 83884	47k 5% 0.5W
3971	4822 116 52234	100k 5% 0.5W
3973	4822 116 52304	82k 5% 0.5W
3975	4822 052 10101	100Ω 5% 0.33W
3980	4822 117 12473	4k7 5% 5W
3981	4822 051 20683	68k 5% 0.1W
3982	4822 051 20683	68k 5% 0.1W
3983	4822 116 52228	680Ω 5% 0.5W
3989	4822 116 52228	680Ω 5% 0.5W
3990	4822 116 52249	1k8 5% 0.5W
3991	4822 050 11002	1k 1% 0.4W
3993	4822 116 52206	120Ω 5% 0.5W
3994	4822 116 83884	47k 5% 0.5W
3995	4822 050 11203	12k 1% 0.4W
3996	4822 050 11002	1k 1% 0.4W
3997	4822 050 11002	1k 1% 0.4W
3998	4822 116 52182	15Ω 5% 0.5W
3999	4822 051 20154	150k 5% 0.1W
4xxx	4822 051 10008	0Ω jumper 1206
4xxx	4822 051 20008	0Ω jumper 0805

5800	3121 218 31331	Hor. driver transf.
5801	2422 531 02386	Switchmode transf.
5802	2422 549 43513	Switchmode transf.
5803	2422 535 94987	Bridge coil 97µH
5804	2422 535 94991	Linearuty corr.
5805	4822 526 10704	Bead 100MHz
5806	4822 157 11086	47µH 10%
5900	3122 138 38641	L.O.T. CML17
5901	3121 218 31201	Hor. signal driver transf.
5902	2422 535 94603	22µH 10%
5903	4822 157 11086	47µH 10%
5904	4822 157 11411	Bead 100MHz
5910	4822 157 71387	Bead 100MHz

6500	4822 130 10794	BZX284-C10
6501	4822 130 83757	BAS216
6502	4822 130 83757	BAS216
6503	4822 130 83757	BAS216
6504	4822 130 42488	BYD33D
6505	4822 130 83757	BAS216
6550	5322 130 31938	BYV27-200
6552	4822 130 34278	BZX79-B6V8
6801	4822 130 42606	BYD33J
6802	5322 130 31938	BYV27-200
6803	5322 130 31938	BYV27-200
6806	3135 011 01511	Spring, clip
6806	4822 130 83812	BY459-1500
6808	3135 011 01511	Spring, clip
6808	9319 001 63671	DD50R
6809	4822 130 83757	BAS216
6810	4822 130 83757	BAS216
6830	4822 130 32896	BYD33M
6850	4822 130 42606	BYD33J
6900	4822 130 30621	1N4148
6901	4822 130 42488	BYD33D
6902	4835 130 37115	BY328
6904	4822 130 34121	BAX18
6906	4822 130 42488	BYD33D
6907	4822 130 34121	BAX18
6909	4822 130 30842	BAV21
6910	4822 130 41602	BYW95C
6915	4822 130 42488	BYD33D
6917	4822 130 34278	BZX79-B6V8
6918	9338 873 00673	BZX55-F27
6919	9338 872 20673	BZX55-F12
6950	4822 130 34278	BZX79-B6V8
6951	4822 130 83757	BAS216

7501	5322 130 60845	BC807-25
7502	4822 130 42804	BC817-25
7503	4822 130 42804	BC817-25
7550	4822 209 15255	TDA4861/V3
7551	5322 130 60159	BC846B
7552	4822 130 41589	2SC1473NCQ
7553	5322 130 60159	BC846B
7590	5322 130 60159	BC846B
7800	5322 130 60159	BC846B
7801	4822 130 42159	BF819
7802	4822 130 63817	BU2520AF
7803	4822 130 44568	BC557B
7804	4822 130 42804	BC817-25
7830	4835 130 47893	2SC3675
7900	4822 209 72804	MC1391P
7901	4822 209 81397	TL431CLPST
7902	4835 209 87838	SC78130P1
7903	4822 130 44568	BC557B
7904	4822 130 60373	BC856B
7905	4822 130 42804	BC817-25
7906	4822 130 63817	BU2520AF
7907	4822 130 40959	BC547B
7908	4822 130 44568	BC557B
7909	4822 130 60373	BC856B
7952	4822 130 60578	2SC2482
7953	5322 130 60845	BC807-25

Mains Switch Panel

Various

1000	4822 267 10966	2P
1001	4822 276 14024	Mains switch 2P 4/128A
1002	4822 267 10966	2P
BKT1	3135 011 01367	Bracket for mains switch

Digital Convergence Panel

Various

1033	2422 025 02496	2P
1034	2422 038 00173	Board connector
1035	4822 267 10888	5P male
1045	4822 267 10888	5P male
1053	2422 025 05897	Board connector
BKT30 0	3135 021 02481	Bracket
BKT30 1	3135 021 02481	Bracket
F300	4822 071 51002	Fuse 1A
F301	2422 086 10786	Fuse 4A
F302	2422 086 10786	Fuse 4A
F303	4822 071 51002	Fuse 1A
F304	4822 071 51002	Fuse 1A
P300	3135 011 03221	IC clip
P301	3135 011 03221	IC clip

C100	4822 126 14585	100nF 10% 50V
C101	4822 126 14585	100nF 10% 50V
C102	4822 126 14585	100nF 10% 50V
C103	4822 122 33575	220pF 5% 63V
C104	4822 122 33575	220pF 5% 63V
C105	5322 122 32335	330pF 10% 100V
C107	4822 126 14585	100nF 10% 50V
C108	4822 126 14585	100nF 10% 50V
C109	4822 126 14585	100nF 10% 50V
C110	5322 122 31647	1nF 10% 63V
C111	4822 122 33177	10nF 20% 50V
C112	4822 126 14585	100nF 10% 50V
C113	4822 126 14585	100nF 10% 50V
C114	5322 122 32531	100pF 5% 50V
C115	4822 126 14585	100nF 10% 50V
C116	5322 122 32531	100pF 5% 50V
C117	4822 126 14585	100nF 10% 50V
C118	4822 126 14585	100nF 10% 50V
C119	5322 122 32531	100pF 5% 50V
C120	5322 122 32531	100pF 5% 50V
C121	5322 122 32531	100pF 5% 50V
C122	5322 122 32531	100pF 5% 50V
C126	4822 124 22652	2,2µF 20% 50V
C127	4822 124 22652	2,2µF 20% 50V
C128	5322 122 32448	10pF 5% 63V
C129	4822 124 41584	100µF 20% 10V
C130	4822 124 40248	10µF 20% 63V
C132	4822 126 14585	100nF 10% 50V
C200	4822 124 21913	1µF 20% 63V
C201	4822 126 14585	100nF 10% 50V
C202	4822 126 14043	1µF 20% 16V
C203	5322 122 32268	470pF 10% 50V
C205	4822 124 21913	1µF 20% 63V
C206	4822 126 14043	1µF 20% 16V
C207	4822 126 14585	100nF 10% 50V
C208	5322 122 32268	470pF 10% 50V
C210	4822 124 21913	1µF 20% 63V
C211	4822 126 14043	1µF 20% 16V
C212	4822 126 14585	100nF 10% 50V
C214	5322 122 32268	470pF 10% 50V
C215	5322 122 32268	470pF 10% 50V
C216	5322 122 32268	470pF 10% 50V
C217	5322 122 32268	470pF 10% 50V
C218	5322 122 32531	100pF 5% 50V
C219	5322 122 32531	100pF 5% 50V
C221	4822 126 14585	100nF 10% 50V
C222	5322 122 32531	100pF 5% 50V
C223	5322 122 32531	100pF 5% 50V
C224	4822 126 14585	100nF 10% 50V
C225	4822 126 14585	100nF 10% 50V
C226	5322 122 32531	100pF 5% 50V
C227	5322 122 32531	100pF 5% 50V
C228	4822 126 14585	100nF 10% 50V
C229	5322 122 32531	100pF 5% 50V
C231	5322 122 32531	100pF 5% 50V
C232	5322 122 32531	100pF 5% 50V
C233	5322 122 32531	100pF 5% 50V
C234	4822 126 14585	100nF 10% 50V
C235	4822 126 14585	100nF 10% 50V
C237	5322 122 32531	100pF 5% 50V
C238	5322 122 32531	100pF 5% 50V
C239	4822 124 40207	100µF 20% 25V
C240	4822 124 40207	100µF 20% 25V
C241	4822 124 40207	100µF 20% 25V
C242	4822 124 40207	100µF 20% 25V
C243	4822 124 40207	100µF 20% 25V
C244	4822 124 40207	100µF 20% 25V
C260	4822 126 14585	100nF 10% 50V
C261	4822 126 14585	100nF 10% 50V
C262	4822 126 14585	100nF 10% 50V
C263	4822 126 14585	100nF 10% 50V
C264	4822 126 14585	100nF 10% 50V
C265	4822 126 14585	100nF 10% 50V
C300	4822 126 14585	100nF 10% 50V
C301	4822 124 22651	1,0µF 20% 50V
C302	4822 126 14585	100nF 10% 50V
C303	4822 124 22651	1,0µF 20% 50V
C304	4822 126 14585	100nF 10% 50V
C305	4822 124 22651	1,0µF 20% 50V
C306	4822 126 14585	100nF 10% 50V
C307	4822 124 22651	1,0µF 20% 50V
C308	4822 124 80061	1000µF 20% 25V
C309	4822 124 80061	1000µF 20% 25V
C310	3198 026 51020	1000µF 20% 50V
C311	3198 026 51020	1000µF 20% 50V
C312	4822 124 80061	1000µF 20% 25V
C313	4822 124 80061	1000µF 20% 25V
C314	4822 124 80061	1000µF 20% 25V
C315	4822 124 80061	1000µF 20% 25V
C316	4822 124 40255	100µF 20% 63V
C317	5322 121 42386	100nF 5% 63V
C318	5322 122 33538	150pF 2% 63V
C319	5322 122 33538	150pF 2% 63V
C320	5322 122 33538	150pF 2% 63V
C321	4822 124 40255	100µF 20% 63V
C322	5322 121 42386	100nF 5% 63V
C323	4822 124 22652	2,2µF 20% 50V
C324	5322 122 33538	150pF 2% 63V
C325	5322 122 33538	150pF 2% 63V
C326	5322 122 33538	150pF 2% 63V
C327	4822 124 40255	100µF 20% 63V
C328	5322 121 42386	100nF 5% 63V
C329	4822 124 40255	100µF 20% 63V
C330	5322 121 42386	100nF 5% 63V
C331	4822 124 22652	2,2µF 20% 50V
C332	3198 026 51020	1000µF 20% 50V
C333	3198 026 51020	1000µF 20% 50V
C334	4822 124 41751	47µF 20% 50V

BR2	4822 051 20008	0Ω jumper 0805
R102	4822 117 10833	10k 1% 0,1W
R103	4822 117 11139	1k5 1% 0,1W
R104	4822 051 20101	100Ω 5% 0,1W

R105	4822 117 11503	220Ω 1% 0.1W
R106	4822 117 12955	2k7 1% 0,1W 0805
R107	4822 116 52283	4k7 5% 0,5W
R108	4822 052 10101	100Ω 5% 0,33W
R109	4822 050 11002	1k 1% 0,4W
R110	4822 052 10101	100Ω 5% 0,33W
R111	4822 051 20472	4k7 5% 0,1W
R112	4822 051 20472	4k7 5% 0,1W
R113	4822 117 10833	10k 1% 0,1W
R114	4822 117 10833	10k 1% 0,1W
R115	4822 051 20333	33k 5% 0,1W
R116	4822 116 52269	3k3 5% 0,5W
R117	4822 117 10833	10k 1% 0,1W
R118	4822 116 52256	2k2 5% 0,5W
R119	4822 117 10833	10k 1% 0,1W
R121	4822 116 52175	100Ω 5% 0,5W
R123	4822 051 20472	4k7 5% 0,1W
R124	4822 051 20101	100Ω 5% 0,1W
R125	4822 116 52175	100Ω 5% 0,5W
R126	4822 117 11449	2k2 1% 0,1W
R127	4822 116 83933	15k 1% 0,1W
R128	4822 117 11507	6k8 1% 0,1W
R129	4822 116 52256	2k2 5% 0,5W
R130	4822 117 10833	10k 1% 0,1W
R131	4822 116 52175	100Ω 5% 0,5W
R132	4822 116 52175	100Ω 5% 0,5W
R133	4822 116 52175	100Ω 5% 0,5W
R134	4822 116 52175	100Ω 5% 0,5W
R135	4822 116 83883	470Ω 5% 0,5W
R136	4822 116 83883	470Ω 5% 0,5W
R137	4822 116 83883	470Ω 5% 0,5W
R138	4822 116 52175	100Ω 5% 0,5W
R139	4822 051 20101	100Ω 5% 0,1W
R140	4822 051 20101	100Ω 5% 0,1W
R142	4822 051 20472	4k7 5% 0,1W
R143	4822 051 20332	3k3 5% 0,1W
R144	4822 117 10837	100k 1% 0.1W
R145	4822 050 21003	10k 1% 0,6W
R146	4822 051 20472	4k7 5% 0,1W
R147	4822 117 10833	10k 1% 0,1W
R148	4822 117 11449	2k2 1% 0,1W
R149	4822 051 20223	22k 5% 0,1W
R150	4822 116 83933	15k 1% 0,1W
R151	4822 117 11449	2k2 1% 0,1W
R152	4822 051 20333	33k 5% 0,1W
R153	4822 051 10102	1k 2% 0,25W
R154	4822 050 11002	1k 1% 0,4W
R155	4822 051 10102	1k 2% 0,25W
R156	4822 051 10102	1k 2% 0,25W
R157	4822 051 10102	1k 2% 0,25W
R158	4822 051 20472	4k7 5% 0,1W
R159	4822 051 20101	100Ω 5% 0,1W
R200	4822 051 20109	10Ω 5% 0,1W
R201	4822 116 52176	10Ω 5% 0,5W
R202	4822 116 83883	470Ω 5% 0,5W
R203	4822 051 20472	4k7 5% 0,1W
R204	4822 117 10833	10k 1% 0,1W
R207	4822 051 20223	22k 5% 0,1W
R208	4822 051 20392	3k9 5% 0,1W
R209	4822 116 52176	10Ω 5% 0,5W
R210	4822 052 10101	100Ω 5% 0,33W
R211	4822 116 83883	470Ω 5% 0,5W
R212	4822 117 10834	47k 1% 0,1W
R214	4822 117 10833	10k 1% 0,1W
R216	4822 051 20223	22k 5% 0,1W
R217	4822 116 52276	3k9 5% 0,5W
R218	4822 051 20109	10Ω 5% 0,1W
R219	4822 052 10101	100Ω 5% 0,33W
R220	4822 052 10101	100Ω 5% 0,33W
R222	4822 117 10833	10k 1% 0,1W
R224	4822 051 20223	22k 5% 0,1W
R225	4822 117 10834	47k 1% 0,1W
R226	4822 116 52276	3k9 5% 0,5W
R227	4822 116 83883	470Ω 5% 0,5W
R228	4822 052 10101	100Ω 5% 0,33W
R229	4822 116 52176	10Ω 5% 0,5W
R230	4822 051 20109	10Ω 5% 0,1W
R231	4822 051 20223	22k 5% 0,1W
R232	4822 117 10834	47k 1% 0,1W
R233	4822 116 83883	470Ω 5% 0,5W
R234	4822 117 10833	10k 1% 0,1W
R237	4822 051 20223	22k 5% 0,1W
R238	4822 117 10834	47k 1% 0,1W
R239	4822 116 52276	3k9 5% 0,5W
R240	4822 116 83883	470Ω 5% 0,5W
R241	4822 052 10101	100Ω 5% 0,33W
R243	4822 117 10833	10k 1% 0,1W
R245	4822 052 10101	100Ω 5% 0,33W
R246	4822 116 52176	10Ω 5% 0,5W
R247	4822 051 20109	10Ω 5% 0,1W
R248	4822 051 20223	22k 5% 0,1W
R249	4822 117 10834	47k 1% 0,1W
R250	4822 116 83883	470Ω 5% 0,5W
R252	4822 117 10833	10k 1% 0,1W
R254	4822 100 12156	4k7 30%
R255	4822 100 12156	4k7 30%
R256	4822 100 12156	4k7 30%
R257	4822 100 12156	4k7 30%
R258	4822 100 12156	4k7 30%
R259	4822 100 12156	4k7 30%
R300	4822 051 20332	3k3 5% 0,1W
R301	4822 053 10688	6Ω8 5% 1W
R302	4822 053 10688	6Ω8 5% 1W
R303	4822 053 10221	220Ω 5% 1W
R304	4822 053 10688	6Ω8 5% 1W
R305	4822 053 10688	6Ω8 5% 1W
R306	4822 051 20332	3k3 5% 0,1W
R307	4822 053 10221	220Ω 5% 1W
R308	4822 051 20332	3k3 5% 0,1W
R309	4822 051 20332	3k3 5% 0,1W
R310	4822 053 10688	6Ω8 5% 1W
R311	4822 053 10688	6Ω8 5% 1W
R312	4822 053 10221	220Ω 5% 1W
R313	4822 116 52269	3k3 5% 0,5W
R314	4822 116 52269	3k3 5% 0,5W
R315	4822 051 20273	27k 5% 0,1W
R316	4822 051 20472	4k7 5% 0,1W
R317	4822 053 10688	6Ω8 5% 1W
R318	4822 053 10688	6Ω8 5% 1W
R319	4822 053 10688	6Ω8 5% 1W
R320	4822 053 10688	6Ω8 5% 1W
R321	4822 051 20332	3k3 5% 0,1W
R322	4822 053 10221	220Ω 5% 1W
R323	4822 051 20332	3k3 5% 0,1W
R324	4822 051 20332	3k3 5% 0,1W
R325	4822 051 20332	3k3 5% 0,1W
R326	4822 053 10688	6Ω8 5% 1W
R327	4822 053 10688	6Ω8 5% 1W
R328	4822 053 10221	220Ω 5% 1W
R329	4822 051 20332	3k3 5% 0,1W
R330	4822 053 10221	220Ω 5% 1W
R331	4822 051 20332	3k3 5% 0,1W
R332	4822 051 20273	27k 5% 0,1W
R333	4822 051 20472	4k7 5% 0,1W
R334	2120 105 92509	15Ω 5% 3W

F100	2422 549 43268	Coil var. 7.96MHz
L100	4822 157 11518	5,6µH 5%
L101	4822 157 11518	5,6µH 5%
L102	4822 157 11518	5,6µH 5%
L103	4822 157 11518	5,6µH 5%
L104	4822 157 11518	5,6µH 5%
L105	4822 157 11518	5,6µH 5%
L106	4822 157 11518	5,6µH 5%
L107	4822 157 11518	5,6µH 5%
L112	4822 157 11525	6,8µH 5%
L300	4822 157 50961	22µH
L301	2422 535 96613	22µH 10%
L302	2422 535 96613	22µH 10%
L303	4822 157 50961	22µH
L304	4822 157 50961	22µH

D100	4822 130 83757	BAS216
D101	4822 130 83757	BAS216
D102	4822 130 83757	BAS216
D103	4822 130 83757	BAS216
D104	4822 130 83757	BAS216
D105	4822 130 83757	BAS216
D154	4822 130 10654	BAT254
D300	4822 130 83757	BAS216
D301	4822 130 83757	BAS216
D302	4822 130 83757	BAS216
D303	4822 130 83757	BAS216
V101	9340 332 80135	BB148
Z100	4822 130 34233	BZX79-B5V1
Z101	4822 130 34197	BZX79-B12
Z102	4822 130 61219	BZX79-B10

Q100	5322 130 60159	BC846B
Q101	5322 130 60159	BC846B
Q103	5322 130 60159	BC846B
Q104	4822 130 44237	BF450
Q105	5322 130 60159	BC846B
Q106	5322 130 60159	BC846B
Q107	5322 130 60159	BC846B
Q108	5322 130 60159	BC846B
Q109	5322 130 60159	BC846B
Q110	5322 130 60159	BC846B
Q300	4822 130 40959	BC547B
Q301	4822 130 40959	BC547B
IC100	4822 209 83163	LM833nF
IC101	4822 209 16977	M24C32-WBN6
IC102	4835 209 88475	UPD65654GF
IC103	5322 209 11322	74HC08nF
IC200	4822 209 83163	LM833nF
IC201	4822 209 83163	LM833nF
IC202	4822 209 83163	LM833nF
IC203	4822 209 33562	TDA1313T
IC204	4822 209 33562	TDA1313T
IC205	4822 209 33562	TDA1313T
IC300	4822 209 80817	L7805CV
IC301	4822 209 80817	L7805CV
IC302	4822 209 73492	L7912CV
IC303	4822 209 81726	MC7812CT
IC304	9322 123 44682	ICSTK392-120
IC305	9322 123 44682	ICSTK392-120

Scavem Module

Various

1801	2422 025 11954	2P male v 2.50
1802	2422 025 11954	2P male v 2.50
1804	4822 265 11518	10P male v
1805	4822 267 10973	1P

2000	4822 121 41857	10nF 5% 250V
2001	4822 124 41751	47µF 20% 50V
2003	4822 124 41751	47µF 20% 50V
2004	4822 124 41751	47µF 20% 50V
2005	5322 121 42386	100nF 5% 63V
2006	4822 121 70162	10nF 5% 400V
2007	4822 121 51473	470nF 20% 63V
2010	4822 121 41857	10nF 5% 250V
2012	2020 012 93545	47µF 20% 160V
2013	4822 126 13512	330pF 10% 50V
2015	2020 557 90707	15pF 10% 500V
2016	4822 121 70162	10nF 5% 400V
2017	4822 126 12726	47pF 5% 50V
2019	4822 122 32027	56pF 2% 100V
2020	4822 122 32027	56pF 2% 100V
2021	4822 122 31822	4.7pF 0.25pF 100V
2024	4822 124 42336	47µF 20% 160V
2031	4822 121 41857	10nF 5% 250V

3002	4822 117 12622	330Ω 5% 5W
3003	2120 105 90177	33Ω 5% 1W
3007	2120 106 90293	3.3Ω 5% 1W
3030	2120 106 90293	3.3Ω 5% 1W
3032	2120 105 92645	68Ω 5% 3W
3038	2120 105 90177	33Ω 5% 1W
3042	2120 105 92645	68Ω 5% 3W

7000	4822 130 40959	BC547B
7001	4822 130 40981	BC337-25
7002	4822 130 63634	2SA1837Y
7003	4822 130 40959	BC547B
7004	4822 130 40959	BC547B
7005	4822 130 40959	BC547B
7006	4822 130 10941	2SC4793
7007	4822 130 40959	BC547B
7008	4822 130 44568	BC557B
7009	4822 130 40854	BC327

CRT Panel Red

Various

1000	4822 267 10691	1P yellow
1701	2422 500 80051	10P
1702	4822 252 60151	Surge protect DSP-501N-A21F
1871	4822 267 10541	10P
1873	4822 265 11551	Push-on terminal

1874	4822 267 10691	1P yellow

⊣⊢

2701	4822 121 70162	10nF 5% 400V
2702	4822 121 70162	10nF 5% 400V
2705	4822 126 14053	1nF 10% 2KV
2717	4822 124 12386	10µF 350V
2720	4822 124 40248	10µF 20% 63V
2721	5322 121 42386	100nF 5% 63V
2722	2020 557 90147	560pF 10% 500V
2750	4822 126 13499	220pF 5% 50V
2751	2020 300 90647	1.2nF 5% 100V
2752	2020 558 90585	1nF 20% 1KV

3701	2120 105 92799	0.27Ω 5% 0.5W
3703	4822 116 52175	100Ω 5% 0.5W
3710	4822 117 12516	680Ω 2% 0.5W
3716	2120 103 90057	100Ω 20%0.5W
3718	2120 103 07223	22k 20% 0.5W
3719	2120 106 90531	5.6Ω 5% 0.5W
3720	2120 106 90531	5.6Ω 5% 0.5W
3730	2322 257 41332	3.3k 5% 5W
3731	4822 117 12618	2k2 5% 5W
3733	4822 053 20106	10M 5% 0.25W
3735	4822 116 52175	100Ω 5% 0.5W
3737	2120 103 11272	2.7k 5% 0.25W
3738	4822 116 52234	100k 5% 0.5W
3740	4822 050 11002	1k 1% 0.4W
3742	4822 050 21002	1k 1% 0.6W
3743	4822 050 22201	220Ω 1% 0.6W
3745	4822 050 26809	68Ω 1% 0.6W
3750	4822 116 52175	100Ω 5% 0.5W
3751	4822 050 21009	10Ω 1% 0.6W
3752	2120 103 90012	10k 10% 0.25W
3753	2120 101 90213	43Ω 5% 0.25W
3755	4822 050 24709	47Ω 1% 0.6W
3756	4822 050 26809	68Ω 1% 0.6W

5701	4822 157 52333	100µH
5702	4822 157 50965	15µH
5703	4822 157 11517	10µH 5%
5704	4822 157 11517	10µH 5%
5705	4822 157 50965	15µH

6701	9322 019 69683	MUR140
6702	9331 668 30133	BZX79-B6V2
6705	9322 019 69683	MUR140
6706	9322 019 69683	MUR140

7701	0061 060 00003	2SC3790E
7702	9322 122 61686	SPS7350
7703	9322 103 08678	2SC2383-0
7705	9334 311 90126	MPSA92

CRT Panel Green

Various

1000	4822 267 10691	1P yellow
1001	4822 267 10691	1P yellow
1801▲	2422 500 80051	10P
1802▲	4822 252 60151	Surge protect DSP-501N-A21F
1881	4822 267 10541	10P
1882	4822 267 10542	4P
1883	4822 267 10541	10P
1884	4822 267 10541	10P
1886	4822 265 11551	Push-on terminal
1887	4822 265 11551	Push-on terminal

⊣⊢

2801	4822 121 70162	10nF 5% 400V
2805▲	4822 126 14053	1nF 10% 2KV
2807	4822 121 70162	10nF 5% 400V
2817	4822 124 12386	10µF 350V
2820	4822 124 40248	10µF 20% 63V
2821	5322 121 42386	100nF 5% 63V
2822	2020 557 90147	560pF 10% 500V
2850	4822 126 13499	220pF 5% 50V
2851	2020 300 90647	1.2nF 5% 100V
2852	2020 558 90585	1nF 20% 1KV

3801▲	2120 105 92799	0.27Ω 5% 0.5W
3803	4822 116 52175	100Ω 5% 0.5W
3810▲	4822 117 12516	680Ω 2% 0.5W
3816	2120 103 90057	100Ω 20% 0.5W
3818▲	2120 103 07223	22k 20% 0.5W
3819▲	2120 106 90531	5.6Ω 5% 0.5W
3820▲	2120 106 90531	5.6Ω 5% 0.5W
3825	4822 116 83874	220k 5% 0.5W
3826	4822 116 52234	100k 5% 0.5W
3830▲	2322 257 41332	3.3k 5% 5W
3831▲	4822 117 12618	2k2 5% 5W
3833	4822 053 20106	10M 5% 0.25W
3835	4822 116 52175	100Ω 5% 0.5W
3837	2120 103 11272	2.7k 5% 0.25W
3838	4822 116 52234	100k 5% 0.5W
3840	4822 050 11002	1k 1% 0.4W
3842	4822 050 21002	1k 1% 0.6W
3843	4822 050 22201	220Ω 1% 0.6W
3845	4822 050 26809	68Ω 1% 0.6W
3850	4822 116 52175	100Ω 5% 0.5W
3851	4822 050 21009	10Ω 1% 0.6W
3852	2120 103 90012	10k.10% 0.25W
3853	2120 101 90213	43Ω 5% 0.5W
3855	4822 050 24709	47Ω 1% 0.6W
3856	4822 050 26809	68Ω 1% 0.6W
3857	4822 050 21003	10k 1% 0.6W

5801	4822 157 52333	100µH
5802	4822 157 50965	15µH
5803	4822 157 11517	10µH 5%
5804	4822 157 11517	10µH 5%
5805	4822 157 50965	15µH

6802	9331 668 30133	BZX79-B6V2
6805	9322 019 69683	MUR140
6806	4822 130 34441	BZX79-B22

7801	0061 060 00003	2SC3790E
7802	9322 122 61686	SPS7350
7803	9322 103 08678	2SC2383-0
7805	9334 311 90126	MPSA92

CRT Panel Blue

Various

1000	4822 267 10691	1P yellow
1894	4822 267 10541	10P
1896	4822 265 11551	Push-on terminal
1897	4822 267 10691	1P yellow
1901▲	2422 500 80051	10P
1902▲	4822 252 60151	Surge protect DSP-501N-A21F

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2901	4822 121 70162	10nF 5% 400V
2902	4822 121 70162	10nF 5% 400V
2905▲	4822 126 14053	1nF 10% 2KV
2917	4822 124 12386	10µF 350V
2920	4822 124 40248	10µF 20% 63V
2921	5322 121 42386	100nF 5% 63V
2922	2020 557 90147	560pF 10% 500V
2950	4822 126 13499	220pF 5% 50V
2951	2020 300 90647	1.2nF 5% 100V
2952	2020 558 90585	1nF 20% 1KV

3901▲	2120 105 92799	0.27Ω 5% 0.5W
3903	4822 116 52175	100Ω 5% 0.5W
3910▲	4822 117 12516	680Ω 2% 0.5W
3916	2120 103 90057	100Ω 20% 0.5W
3918▲	2120 103 07223	22k 20% 0.5W
3919▲	2120 106 90531	5.6Ω 5% 0.5W
3920▲	2120 106 90531	5.6Ω 5% 0.5W
3930▲	2322 257 41332	3.3k 5% 5W
3931▲	4822 117 12618	2k2 5% 5W
3933	4822 053 20106	10M 5% 0.25W
3935	4822 116 52175	100Ω 5% 0.5W
3937	2120 103 11272	2.7k 5% 0.25W
3938	4822 116 52234	100k 5% 0.5W
3940	4822 050 11002	1k 1% 0.4W
3942	4822 050 21002	1k 1% 0.6W
3943	4822 050 22201	220Ω 1% 0.6W
3945	4822 050 26809	68Ω 1% 0.6W
3950	4822 116 52175	100Ω 5% 0.5W
3951	4822 050 21009	10Ω 1% 0.6W
3952	2120 103 90012	10k 10% 0.25W
3953	2120 101 90213	43Ω 5% 0.5W
3955	4822 050 24709	47Ω 1% 0.6W
3956	4822 050 26809	68Ω 1% 0.6W

5901	4822 157 52333	100µH
5902	4822 157 50965	15µH
5903	4822 157 11517	10µH 5%
5904	4822 157 11517	10µH 5%
5905	4822 157 50965	15µH

6901	9322 019 69683	MUR140
6902	9331 668 30133	BZX79-B6V2
6905	9322 019 69683	MUR140
6906	9322 019 69683	MUR140

7901	0061 060 00003	2SC3790E
7902	9322 122 61686	SPS7350
7903	9322 103 08678	2SC2383-0
7905	9334 311 90126	MPSA92

Audio Amplifier Panel

Various

1201	2422 086 10889	Fuse 4A
1302	3135 011 03221	IC clip
1304	3135 011 02481	Bracket
1400	2422 025 15875	4P
1401	4822 267 10537	5P
1403	4822 492 62076	Clip for transistors
1418	4822 267 10542	4P
1449	2422 025 15832	5P

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2201	4822 124 21913	1µF 20% 63V
2202	4822 122 30043	10nF 80% 63V
2203	4822 122 30043	10nF 80% 63V
2208	4822 124 40248	10µF 20% 63V
2301	4822 122 10182	100pF 5% 50V
2302	4822 122 10182	100pF 5% 50V
2303	5322 121 42386	100nF 5% 63V
2304	5322 121 42386	100nF 5% 63V
2305	2020 012 92615	100µF 20% 63V
2306	4822 124 40433	47µF 20% 25V
2307	4822 124 40433	47µF 20% 25V
2308	4822 124 40433	47µF 20% 25V
2309	3198 026 51020	1000µF 20% 50V
2310	3198 026 51020	1000µF 20% 50V
2311	4822 124 40433	47µF 20% 25V
2312	4822 124 40433	47µF 20% 25V
2313	5322 121 42386	100nF 5% 63V
2314	5322 121 42386	100nF 5% 63V
2401	2020 558 90557	1nF 10% 1KV
2402	4822 124 80532	220µF 20% 400V
2403	2020 558 90555	470pF 10% 1KV
2404	4822 124 40248	10µF 20% 63V
2405	5322 122 32331	1nF 10% 100V
2406	4822 122 30043	10nF 80% 63V
2407	4822 121 10863	4700pF 2% 63V
2408	5322 122 32331	1nF 10% 100V
2409	4822 122 31211	100pF 10% 500V
2410	4822 124 40207	100µF 20% 25V
2411	4822 124 12423	4700µF 20% 63V

2412	5322 121 42386	100nF 5% 63V
2413	2020 558 90557	1nF 10% 1KV
2414	4822 124 41747	680µF 20% 35V
2415	4822 124 40248	10µF 20% 63V
2416	5322 121 42386	100nF 5% 63V
2417	2020 558 90557	1nF 10% 1KV
2418	5322 121 42386	100nF 5% 63V
2423	4822 124 40433	47µF 20% 25V
2425	4822 122 10182	100pF 5% 50V
2501	5322 121 42386	100nF 5% 63V
2502	4822 124 40433	47µF 20% 25V

3000	4822 116 83884	47k 5% 0.5W
3001	4822 116 52257	22k 5% 0.5W
3003	4822 116 83874	220k 5% 0.5W
3202	4822 116 83884	47k 5% 0.5W
3204	4822 116 52257	22k 5% 0.5W
3208	4822 116 83884	47k 5% 0.5W
3260	4822 116 52257	22k 5% 0.5W
3261	4822 116 52257	22k 5% 0.5W
3301	4822 116 52234	100k 5% 0.5W
3302	4822 116 52234	100k 5% 0.5W
3303	4822 116 52234	100k 5% 0.5W
3304	4822 116 52234	100k 5% 0.5W
3305	4822 116 52175	100Ω 5% 0.5W
3306	4822 116 83878	270k 5% 0.5W
3307	4822 116 52234	100k 5% 0.5W
3309	2322 187 53123	12k 5% 0.5W
3310	2322 187 53123	12k 5% 0.5W
3311	4822 050 21002	1k 1% 0.6W
3312	4822 050 21002	1k 1% 0.6W
3313	4822 116 81753	4Ω7 5% 0.5W
3314	4822 116 81753	4Ω7 5% 0.5W
3403	2120 105 92596	470Ω 5% 3W
3404	4822 050 25101	510Ω 1% 0.6W
3405	4822 050 21001	100Ω 1% 0.6W
3406	4822 116 83874	220k 5% 0.5W
3410	4822 050 23012	3k01 1% 0.6W
3411	4822 116 52175	100Ω 5% 0.5W
3412	2120 105 92596	470Ω 5% 3W
3413	4822 116 52253	2k 5% 0.5W
3414	4822 116 83883	470Ω 5% 0.5W
3415	2120 105 92806	0.47Ω 5% 0.5W
3416	4822 116 83881	390Ω 5% 0.5W
3418	4822 116 83883	470Ω 5% 0.5W
3419	4822 116 52263	2k7 5% 0.5W
3420	4822 117 12169	1Ω 5% 1W
3421	4822 116 81753	4Ω7 5% 0.5W
3422	4822 116 80176	1Ω 5% 0.5W

5401	4822 157 71387	Bead 100MHz
5402	4822 157 71387	Bead 100MHz
5403	4822 157 71387	Bead 100MHz
5404	4822 157 10432	10µH 10%
5405	4822 157 71387	Bead 100MHz
5407	4822 157 71387	Bead 100MHz
5409	4822 157 71387	Bead 100MHz
5410	4822 157 71387	Bead 100MHz
5411	2422 531 02241	Switch mode transf.
5501	4822 157 71387	Bead 100MHz

6202	4822 130 30621	1N4148
6203	4822 130 30621	1N4148
6401	4822 130 30842	BAV21
6402	4835 130 37491	MUR860
6404	9322 019 68683	MUR120
6405	4822 130 41487	BYV95C
6406	4822 130 41487	BYV95C
6407	9331 214 60133	1N4150
6408	4822 130 34382	BZX79-B8V2

7202	4822 130 40959	BC547B
7203	9340 053 00116	J175
7204	9340 053 00116	J175
7207	9340 053 00116	J175
7208	9340 053 00116	J175
7301	9322 121 65682	ICSTK4432
7401	9322 013 35682	UC3845N
7403	9322 113 00687	MTW7N80E

Rear Switch Module

Various

1000	2422 015 19072	Connector
1002	2422 127 00485	Slide switch 4PGF642B
1319	4822 265 11517	1P male
1320	4822 265 11517	1P male
1321	4822 265 11557	5P
1349	2422 025 15779	5P

Front Jack panel

3001	4822 117 11927	75Ω 1% 0.1W
3002	4822 117 11927	75Ω 1% 0.1W
3006	4822 051 20223	22k 5% 0.1W
3009	4822 051 20223	22k 5% 0.1W
3011	4822 051 20392	3k9 5% 0.1W
3013	4822 051 20562	5k6 5% 0.1W 0805
3014	4822 117 11449	2k2 1% 0.1W
3016	4822 117 10833	10k 1% 0.1W
3017	4822 051 20332	3k3 5% 0.1W
3018	4822 117 10833	10k 1% 0.1W
3026	4822 117 10833	10k 1% 0.1W
3027	4822 117 10833	10k 1% 0.1W

6001	4822 130 10852	BZX284-C6V8
6003	4822 130 10852	BZX284-C6V8
6004	4822 130 10852	BZX284-C6V8
6005	4822 130 10852	BZX284-C6V8
6006	4822 130 10852	BZX284-C6V8
6010	4822 130 10852	BZX284-C6V8
6012	4822 130 10852	BZX284-C6V8

7000	4822 130 60373	BC856B
7001	4822 130 60373	BC856B

Interface Panel

Various

1000	4822 267 10933	7P male
1007	4822 265 11507	4P
1083	4822 265 11518	10P male v
1084	4822 265 11507	4P
1301	4822 267 10888	5P male
1302	2422 025 16081	11P
1304	4822 265 11518	10P male v
1305	2422 025 11143	3P male v
1308	4822 267 31673	3P male v
1309	2422 025 15516	9P
1313	4822 267 10973	1P
1315	2422 025 15516	9P
1328	2422 025 16081	11P
1333	2422 025 16081	11P
1335	4822 265 11518	10P male v
1340	2422 025 15516	9P
1341	2422 025 15516	9P
1360	4822 267 31673	3P male v
1364	4822 265 11507	4P
1366	4822 267 31673	3P male v
1375	4822 267 10888	5P male
1377	2422 025 15516	9P

2000	4822 124 40207	100µF 20% 25V
2001	4822 124 81151	22µF 50V
2002	4822 126 13838	100nF 50V 20%
2003	4822 124 40248	10µF 20% 63V
2004	4822 122 33177	10nF 20% 50V
2006	4822 124 40433	47µF 20% 25V
2007	4822 124 81151	22µF 50V
2008	4822 126 13838	100nF 50V 20%
2009	4822 121 51252	470nF 5% 63V
2010	4822 126 13838	100nF 50V 20%
2011	4822 126 13838	100nF 50V 20%
2012	4822 124 40433	47µF 20% 25V
2013	4822 126 13838	100nF 20% 50V
2025	4822 124 21913	1µF 20% 63V
2030	4822 124 21913	1µF 20% 63V
2033	4822 126 13691	27pF 1% 63V
2040	4822 121 42408	220nF 5% 63V
2041	4822 121 42408	220nF 5% 63V
2042	4822 121 42408	220nF 5% 63V
2045	4822 126 13838	100nF 20% 50V
2047	4822 126 13694	68pF 1% 63V
2048	4822 126 13694	68pF 1% 63V
2049	4822 126 13692	47pF 1% 63V
2050	5322 122 32448	10pF 5% 63V
2051	4822 124 40207	100µF 20% 25V
2054	4822 126 13694	68pF 1% 63V
2055	5322 122 32658	22pF 5% 50V
2056	4822 124 40769	4.7µF 20% 100V
2057	4822 124 40769	4.7µF 20% 100V

3000	2120 105 92524	10Ω 5% 3W
3007	4822 117 13577	330Ω 1% 1.25W 0805
3008	4822 117 13577	330Ω 1% 1.25W 0805
3009	4822 117 13577	330Ω 1% 1.25W 0805
3010	4822 117 10834	47k 1% 0.1W
3011	4822 051 20822	8k2 5% 0.1W
3012	4822 117 10834	47k 1% 0.1W
3013	4822 117 10834	47k 1% 0.1W
3014	4822 117 10834	47k 1% 0.1W
3015	4822 051 20822	8k2 5% 0.1W
3017	4822 117 11449	2k2 1% 0.1W
3018	4822 117 11449	2k2 1% 0.1W
3019	4822 117 13577	330Ω 1% 1.25W 0805
3020	4822 117 13577	330Ω 1% 1.25W 0805
3021	4822 117 13577	330Ω 1% 1.25W 0805
3022	4822 051 10102	1k 2% 0.25W
3023	4822 051 10102	1k 2% 0.25W
3024	4822 051 10102	1k 2% 0.25W
3025	4822 051 10102	1k 2% 0.25W
3026	4822 117 11449	2k2 1% 0.1W
3027	4822 051 20391	390Ω 5% 0.1W
3028	4822 051 20472	4k7 5% 0.1W
3029	4822 051 20122	1k2 5% 0.1W
3030	4822 116 83883	470Ω 5% 0.5W
3031	4822 051 20101	100Ω 5% 0.1W
3032	4822 051 20391	390Ω 5% 0.1W
3033	4822 051 20479	47Ω 5% 0.1W
3037	4822 051 10102	1k 2% 0.25W
3039	4822 051 20101	100Ω 5% 0.1W
3040	4822 116 83883	470Ω 5% 0.5W
3041	4822 051 20101	100Ω 5% 0.1W
3042	4822 051 20479	47Ω 5% 0.1W
3043	4822 051 20391	390Ω 5% 0.1W
3044	4822 117 10833	10k 1% 0.1W
3045	4822 051 20561	560Ω 5% 0.1W
3046	4822 051 20471	470Ω 5% 0.1W
3047	4822 117 11449	2k2 1% 0.1W
3048	4822 051 20101	100Ω 5% 0.1W
3049	4822 051 10102	1k 2% 0.25W
3050	4822 051 20561	560Ω 5% 0.1W
3051	4822 051 20332	3k3 5% 0.1W
3052	4822 117 11503	220Ω 1% 0.1W
3053	4822 117 13577	330Ω 1% 1.25W 0805
3054	4822 051 10102	1k 2% 0.25W
3055	4822 051 20561	560Ω 5% 0.1W
3056	4822 051 10102	1k 2% 0.25W
3057	4822 051 20101	100Ω 5% 0.1W
3058	4822 116 83883	470Ω 5% 0.5W
3059	4822 051 20101	100Ω 5% 0.1W
3060	4822 051 20391	390Ω 5% 0.1W
3061	4822 051 20479	47Ω 5% 0.1W
3092	4822 117 11507	6k8 1% 0.1W
3094	4822 051 20332	3k3 5% 0.1W
3095	4822 117 11507	6k8 1% 0.1W
3097	4822 051 20332	3k3 5% 0.1W
3098	4822 117 11507	6k8 1% 0.1W
3100	4822 051 20332	3k3 5% 0.1W
3101	4822 051 10102	1k 2% 0.25W
3102	4822 051 20479	47Ω 5% 0.1W
3103	4822 051 10102	1k 2% 0.25W
3104	4822 051 20479	47Ω 5% 0.1W
3105	4822 051 10102	1k 2% 0.25W
3106	4822 051 20479	47Ω 5% 0.1W
3107	4822 117 10353	150Ω 1% 0.1W
3108	4822 117 13577	330Ω 1% 1.25W 0805
3109	4822 051 10102	1k 2% 0.25W
3110	4822 051 10102	1k 2% 0.25W
3113	4822 051 20101	100Ω 5% 0.1W
3117	4822 051 10102	1k 2% 0.25W
3118	4822 117 11503	220Ω 1% 0.1W

3119	4822 051 20101	100Ω 5% 0.1W
3120	4822 051 10102	1k 2% 0.25W
3121	4822 117 10361	680Ω 1% 0.1W
3122	4822 117 10361	680Ω 1% 0.1W
3123	4822 116 52219	330Ω 5% 0.5W
3124	4822 117 13577	330Ω 1% 1.25W 0805
3125	4822 051 20101	100Ω 5% 0.1W
3126	4822 051 10102	1k 2% 0.25W
3127	4822 117 13577	330Ω 1% 1.25W 0805
3130	4822 051 20472	4k7 5% 0.1W
3131	4822 051 20101	100Ω 5% 0.1W
3132	4822 051 20101	100Ω 5% 0.1W
3141	4822 050 21003	10k 1% 0.6W
3142	4822 117 10361	680Ω 1% 0.1W
3143	4822 051 20229	22Ω 5% 0.1W
3144	4822 051 20472	4k7 5% 0.1W
3145	4822 051 20332	3k3 5% 0.1W
3146	4822 051 20332	3k3 5% 0.1W
3147	4822 051 10102	1k 2% 0.25W
3148	4822 051 20101	100Ω 5% 0.1W
3149	4822 051 20101	100Ω 5% 0.1W
3150	4822 051 20223	22k 5% 0.1W
3151	4822 051 20478	4.7Ω 5% 0.1W
4xxx	4822 051 10008	0Ω jumper 1206
4xxx	4822 051 20008	0Ω jumper 0805

5000	4822 158 10604	6.8 µH 10%
5001	4822 157 51462	10µH 10%
5003	4822 157 11813	3.3µH 5%
5004	4822 157 11231	1µH 5%
5005	4822 157 11231	1µH 5%
5006	4822 157 11231	1µH 5%
5007	4822 158 10604	6.8 µH 10%

6000	4822 130 30621	1N4148
6002	4822 130 83757	BAS216
6003	4822 130 83757	BAS216
6004	4822 130 83757	BAS216
6005	4822 130 83757	BAS216
6006	4822 130 83757	BAS216
6007	4822 130 83757	BAS216
6008	4822 130 83757	BAS216
6009	4822 130 83757	BAS216
6010	4822 130 83757	BAS216
6011	4822 130 83757	BAS216
6012	4822 130 83757	BAS216
6013	4822 130 83757	BAS216
6014	4822 130 83757	BAS216
6015	4822 130 83757	BAS216

7000	4822 209 81726	MC7812CT
7001	4822 209 63995	TDA8444P/N4
7006	5322 130 60159	BC846B
7007	5322 130 60159	BC846B
7008	5322 130 60159	BC846B
7009	5322 130 60159	BC846B
7012	4822 130 60373	BC856B
7013	4822 130 60373	BC856B
7014	4822 130 60373	BC856B
7015	4822 130 60373	BC856B
7016	5322 130 60159	BC846B
7017	4822 130 60373	BC856B
7018	4822 130 60373	BC856B
7019	5322 130 60159	BC846B
7020	4822 130 60373	BC856B
7022	4822 130 60373	BC856B
7023	5322 130 60159	BC846B
7024	4822 130 60373	BC856B
7025	4822 130 60373	BC856B
7026	5322 130 60159	BC846B
7027	4822 130 60373	BC856B
7028	4822 130 60373	BC856B
7029	4822 130 60373	BC856B
7030	4822 130 60373	BC856B
7031	4822 130 60373	BC856B
7035	5322 130 60159	BC846B
7036	5322 130 60159	BC846B
7037	4822 130 60373	BC856B

Customer Control Panel

Various

	3135 014 07311	Holder
1001	2422 128 02854	Tact switch
1002	2422 128 02854	Tact switch
1003	2422 128 02854	Tact switch
1004	2422 128 02854	Tact switch
1005	2422 128 02854	Tact switch
1006	2422 128 02854	Tact switch
1007	2422 128 02854	Tact switch
1008	2422 128 02854	Tact switch
1009	2422 128 02854	Tact switch
1200	2422 025 15524	7P
1207	4822 267 10897	4P male
1215	4822 265 11517	1P

Small Signal Panel [K1-K7]

Various

0002	4822 267 10977	IC socket 42P
0008	5322 255 40958	IC socket 8P
0310	4822 267 10964	9P male v 2.5 red
0311	4822 267 10978	7P male v 2.5 black
0315	4822 267 10979	9P male v 2.5 black
0328	4822 267 10981	11P male v 2.5 black
0333	4822 267 10962	11P
0340	4822 267 10974	9P male v 2.5
0341	4822 267 10974	9P male 2.5
0344	4822 267 10963	3P
0356	4822 267 10963	3P male v 2.5 black
0360	4822 267 10967	3P male v 2.5 black
0364	2422 025 15638	4P male v 1.25
0366	2422 025 16159	3P male v 1.25
1001	4822 242 10972	Crystal 6MHz
1020	3104 328 03621	Small signal panel
1102	4822 210 10841	UV1316/A I-2
1105	4822 242 10688	Filter OFWK9456M
1107	4822 242 72211	Filter 5,5MHz
1109	4822 242 81436	Filter OFWK3953M
1200	4822 267 11033	Socket 3 x cinch
1201	4822 267 10771	Socket 2 x SCART black
1202	4822 267 60385	Socket SCART black
1305	5322 242 73686	Filter 12MHz
1525	4822 242 10695	Crystal 4.433 619 MHz
1528	4822 242 10697	Crystal 3.579 545 MHz
1601	4822 242 10685	Crystal 12MHz
1751	4822 242 10434	Crystal 18,432MHz

2001	4822 126 14585	100nF 10% 50V
2002	4822 126 14305	100nF 10% 16V 0603
2003	4822 126 14305	100nF 10% 16V 0603
2005	4822 126 14305	100nF 10% 16V 0603
2006	4822 126 14305	100nF 10% 16V 0603
2007	4822 126 14305	100nF 10% 16V 0603
2008	4822 126 14305	100nF 10% 16V 0603
2009	4822 126 14305	100nF 10% 16V 0603
2010	4822 126 14305	100nF 10% 16V 0603
2011	4822 126 14305	100nF 10% 16V 0603
2012	4822 126 14305	100nF 10% 16V 0603
2013	4822 126 14076	220nF 80-20% 25V
2014	4822 126 11669	27pF
2015	4822 126 14585	100nF 10% 50V
2016	5322 122 32659	33pF 5% 50V
2018	4822 124 40248	10µF 20% 63V
2019	4822 126 14305	100nF 10% 16V 0603
2020	5322 122 32658	22pF 5% 50V
2021	4822 126 14585	100nF 10% 50V
2022	4822 126 14076	220nF 80-20% 25V
2023	4822 126 14305	100nF 10% 16V 0603
2024	5322 126 11578	1nF 10% 50V 0603
2025	4822 126 14305	100nF 10% 16V 0603
2026	4822 126 14305	100nF 10% 16V 0603
2027	4822 126 14305	100nF 10% 16V 0603
2028	4822 126 14305	100nF 10% 16V 0603
2029	4822 124 40433	47µF 20% 25V
2030	4822 124 40433	47µF 20% 25V
2031	4822 126 14305	100nF 10% 16V 0603
2032	4822 126 14305	100nF 10% 16V 0603
2035	4822 126 14585	100nF 10% 50V
2037	4822 126 14585	100nF 10% 50V
2038	4822 126 14585	100nF 10% 50V
2039	4822 126 13883	220pF 5% 50V
2040	4822 122 33177	10nF 20% 50V
2042	4822 051 30331	330Ω 5% 0.062W 0603
2043	4822 122 33777	330Ω 5% 0.062W 0603
2044	4822 122 33777	330Ω 5% 0.062W 0603
2045	4822 124 41584	100µF 20% 10V
2046	4822 126 14585	100nF 10% 50V
2049	4822 126 14226	82pF 5% 50V 0603
2050	4822 126 14226	82pF 5% 50V 0603
2051	4822 126 14226	82pF 5% 50V 0603
2052	4822 126 14226	82pF 5% 50V 0603
2053	4822 126 14226	82pF 5% 50V 0603
2054	4822 126 14226	82pF 5% 50V 0603
2101	4822 124 40196	220µF 20% 16V
2102	4822 126 13473	220nF 80-20% 50V
2104	4822 122 33177	10nF 20% 50V
2105	4822 122 33177	10nF 20% 50V
2106	4822 122 33575	220pF 5% 63V
2107	4822 126 13694	68pF 1% 63V
2108	5322 122 31873	2.7pF +-0.5 100V
2109	4822 124 22652	2.2µF 20% 50V
2110	4822 124 21913	1µF 20% 63V
2111	4822 126 14585	100nF 10% 50V
2112	4822 122 33891	3.3nF 10% 63V
2116	4822 124 41584	100µF 20% 10V
2117	4822 126 13482	470nF 80/20% 16V
2118	5322 122 33244	8.2pF 5% 50V
2119	5322 122 31863	330pF 5% 63V
2120	4822 126 14076	220nF 80-20% 25V
2121	4822 124 41584	100µF 20% 10V
2125	4822 122 33177	10nF 20% 50V
2126	4822 124 40433	47µF 20% 25V
2127	4822 126 14076	220nF 80-20% 25V
2202	5322 122 31863	330pF 5% 63V
2203	5322 122 31863	330pF 5% 63V
2204	4822 126 14305	100nF 10% 16V 0603
2205	4822 124 40248	10µF 20% 63V
2206	5322 122 32531	100pF 5% 50V
2209	5322 122 31863	330pF 5% 63V
2210	5322 122 32531	100pF 5% 50V
2212	4822 124 40248	10µF 20% 63V
2213	4822 126 14305	100nF 10% 16V 0603
2215	5322 122 31863	330pF 5% 63V
2216	5322 122 31863	330pF 5% 63V
2217	5322 122 32531	100pF 5% 50V
2219	5322 122 31863	330pF 5% 63V
2220	5322 122 32531	100pF 5% 50V
2221	4822 126 14076	220nF 25V. P8020
2222	4822 124 40433	47µF 20% 25V
2224	5322 122 32531	100pF 5% 50V
2226	5322 122 32531	100pF 5% 50V
2228	5322 122 31863	330pF 5% 63V
2229	5322 122 31863	330pF 5% 63V
2235	4822 122 33891	3.3nF 10% 63V
2300	4822 124 40196	220µF 20% 16V
2301	4822 126 13838	100nF 50V 20%
2302	4822 126 13838	100nF 50V 20%
2303	4822 124 22652	2.2µF 20% 50V
2304	4822 126 14305	100nF 10% 16V 0603
2307	4822 122 33741	10pF 10% 50V
2308	4822 122 33741	10pF 10% 50V
2311	4822 124 40196	220µF 20% 16V
2312	4822 126 14305	100nF 10% 16V 0603
2313	4822 126 13694	68pF 1% 63V
2315	5322 122 34098	10nF 10% 63V
2321	4822 126 13881	470pF 5% 50V
2322	4822 126 13881	470pF 5% 50V
2323	5322 121 42386	100nF 5% 63V
2331	5322 126 11583	10nF 10% 50V 0603
2340	4822 126 13881	470pF 5% 50V
2343	5322 122 32448	10pF 5% 63V
2344	4822 126 14305	100nF 10% 16V 0603
2351	4822 126 13849	220nF 10% 16V
2403	4822 126 13838	100nF 50V 20%
2404	4822 126 13838	100nF 50V 20%
2405	4822 126 13838	100nF 50V 20%
2406	4822 126 14305	100nF 10% 16V 0603
2407	4822 126 14305	100nF 10% 16V 0603
2408	4822 126 14305	100nF 10% 16V 0603
2410	4822 126 14305	100nF 10% 16V 0603
2411	4822 126 14305	100nF 10% 16V 0603
2412	4822 126 14305	100nF 10% 16V 0603
2414	3198 021 90030	0Ω jumper 0603
2415	3198 021 90030	0Ω jumper 0603
2416	3198 021 90030	0Ω jumper 0603
2417	4822 126 14305	100nF 10% 16V 0603
2418	4822 124 40769	4.7µF 20% 100V
2419	5322 122 32654	22nF 10% 63V
2423	4822 124 21913	1µF 20% 63V
2425	3198 021 90030	0Ω jumper 0603
2428	4822 126 13956	68pF 5% 63V 0603
2429	4822 126 13956	68pF 5% 63V 0603

2430	5322 122 32269	6.8pF 5% 50V
2501	4822 126 14305	100nF 10% 16V 0603
2502	4822 126 14305	100nF 10% 16V 0603
2503	4822 126 14305	100nF 10% 16V 0603
2504	4822 126 14305	100nF 10% 16V 0603
2505	4822 126 14305	100nF 10% 16V 0603
2506	4822 126 14305	100nF 10% 16V 0603
2507	4822 126 14305	100nF 10% 16V 0603
2508	4822 126 14305	100nF 10% 16V 0603
2509	4822 126 14305	100nF 10% 16V 0603
2510	4822 126 14305	100nF 10% 16V 0603
2511	4822 126 14305	100nF 10% 16V 0603
2512	4822 126 14305	100nF 10% 16V 0603
2520	4822 126 14305	100nF 10% 16V 0603
2521	4822 126 14305	100nF 10% 16V 0603
2522	5322 126 11579	3.3nF 10% 63V
2525	4822 126 14507	18pF 5% 50V 0603
2528	4822 122 33752	15pF 5% 50V
2532	4822 126 14043	1µF 20% 16V
2534	5322 126 10223	4.7nF 10% 63V
2535	4822 126 14491	2.2µF 10V
2536	4822 126 14585	100nF 10% 50V
2537	4822 126 14585	100nF 10% 50V
2538	4822 124 40433	47µF 20% 25V
2539	4822 126 14305	100nF 10% 16V 0603
2540	4822 124 40433	47µF 20% 25V
2541	5322 122 32654	22nF 10% 63V
2545	4822 126 14305	100nF 10% 16V 0603
2550	4822 126 14305	100nF 10% 16V 0603
2551	5322 122 32448	10pF 5% 63V
2552	5322 122 32269	6.8pF 5% 50V
2553	4822 126 13838	100nF 20% 50V
2554	4822 126 13838	100nF 20% 50V
2555	4822 126 14305	100nF 10% 16V 0603
2556	4822 126 14305	100nF 10% 16V 0603
2557	4822 126 14305	100nF 10% 16V 0603
2558	4822 126 14305	100nF 10% 16V 0603
2559	4822 124 40207	100µF 20% 25V
2560	4822 126 14305	100nF 10% 16V 0603
2561	4822 124 81286	47µF 20% 16V
2562	4822 126 14305	100nF 10% 16V 0603
2563	4822 124 81286	47µF 20% 16V
2565	4822 122 33753	150pF 5% 50V
2566	4822 126 13956	68pF 5% 63V 0603
2567	5322 126 10184	820pF 5% 50V
2568	4822 122 31765	100pF 2% 63V
2569	4822 122 33177	10nF 20% 50V
2601	4822 126 14305	100nF 10% 16V 0603
2602	4822 124 81151	22µF 50V
2603	4822 126 14585	100nF 10% 50V
2604	4822 124 41584	100µF 20% 10V
2605	4822 126 14585	100nF 10% 50V
2606	4822 124 80144	220µF 20% 25V
2607	4822 126 14585	100nF 10% 50V
2608	4822 124 81151	22µF 50V
2609	4822 126 14585	100nF 10% 50V
2610	4822 124 81151	22µF 50V
2611	4822 126 14305	100nF 10% 16V 0603
2612	4822 124 40248	10µF 20% 63V
2613	4822 126 14585	100nF 10% 50V
2615	4822 126 13692	47pF 1% 63V
2616	4822 126 13692	47pF 1% 63V
2617	4822 126 14218	3.9pF 50V
2618	4822 126 11669	27pF
2619	4822 126 11663	12pF
2620	4822 126 14218	3.9pF 50V
2621	4822 126 11669	27pF
2623	4822 126 11663	12pF
2624	4822 126 14218	3.9pF 50V
2625	4822 126 11669	27pF
2626	4822 126 11663	12pF
2627	4822 122 31765	100pF 2% 63V
2628	4822 126 14585	100nF 10% 50V
2629	4822 126 14225	56pF 5% 50V 0603
2630	4822 126 14494	22nF 10% 25V 0603
2631	4822 122 31765	100pF 2% 63V
2632	4822 126 14507	18pF 5% 50V 0603
2633	4822 126 14494	22nF 10% 25V 0603
2634	4822 122 33752	15pF 5% 50V
2635	4822 122 33777	47pF 5% 63V
2636	4822 126 14508	180pF 5% 50V 0603
2637	4822 126 14507	18pF 5% 50V 0603
2638	4822 126 14494	22nF 10% 25V 0603
2639	4822 122 33752	15pF 5% 50V
2640	4822 122 33777	47pF 5% 63V
2641	4822 126 14508	180pF 5% 50V 0603
2642	4822 126 14507	18pF 5% 50V 0603
2643	4822 126 14494	22nF 10% 25V 0603
2644	4822 122 33752	15pF 5% 50V
2645	4822 122 33777	47pF 5% 63V
2646	4822 126 14508	180pF 5% 50V 0603
2647	4822 126 14507	18pF 5% 50V 0603
2648	4822 126 14507	18pF 5% 50V 0603
2649	5322 122 32658	22pF 5% 50V
2650	5322 122 32658	22pF 5% 50V
2651	4822 124 12095	100µF 20% 16V
2652	4822 126 14585	100nF 10% 50V
2655	4822 126 14305	100nF 10% 16V 0603
2656	4822 126 14305	100nF 10% 16V 0603
2657	4822 124 40248	10µF 20% 63V
2658	4822 126 14585	100nF 10% 50V
2659	4822 126 14585	100nF 10% 50V
2660	4822 126 14585	100nF 10% 50V
2661	4822 126 14585	100nF 10% 50V
2662	4822 126 14585	100nF 10% 50V
2663	4822 126 14585	100nF 10% 50V
2664	4822 126 14585	100nF 10% 50V
2665	4822 126 14585	100nF 10% 50V
2666	4822 126 14585	100nF 10% 50V
2667	4822 126 14585	100nF 10% 50V
2670	4822 126 14585	100nF 10% 50V
2671	4822 126 14585	100nF 10% 50V
2751	4822 122 33761	22pF 5% 50V
2752	4822 126 13692	47pF 1% 63V
2753	4822 122 32927	220nF 20% 50V
2754	5322 122 32268	470pF 10% 50V
2755	5322 122 32268	470pF 10% 50V
2756	5322 122 32268	470pF 10% 50V
2757	5322 122 32268	470pF 10% 50V
2758	5322 122 32268	470pF 10% 50V
2759	5322 122 32268	470pF 10% 50V
2760	5322 122 32268	470pF 10% 50V
2761	4822 122 32927	220nF 20% 50V
2762	4822 122 32927	220nF 20% 50V
2763	5322 122 32268	470pF 10% 50V
2764	5322 122 32268	470pF 10% 50V
2765	4822 124 12095	100µF 20% 16V
2766	4822 124 12095	100µF 20% 16V
2767	5322 122 32286	3.3pF 5% 50V
2768	5322 122 32286	3.3pF 5% 50V
2769	4822 126 13482	470nF 80/20% 16V
2770	5322 126 11583	10nF 10% 50V 0603
2771	4822 122 33177	10nF 20% 50V
2772	4822 122 33761	22pF 5% 50V
2773	5322 122 31647	1nF 10% 63V
2774	5322 122 31647	1nF 10% 63V
2775	4822 126 13482	470nF 80/20% 16V
2776	4822 122 33761	22pF 5% 50V
2777	5322 124 41979	10µF 10% 16V
2778	5322 124 41979	10µF 10% 16V
2779	4822 126 13838	100nF 50V 20%
2780	5322 124 41979	10µF 10% 16V
2781	4822 126 13838	100nF 50V 20%
2782	5322 124 41979	10µF 10% 16V
2783	4822 126 13482	470nF 80/20% 16V
2784	4822 126 13482	470nF 80/20% 16V
2785	5322 122 31647	1nF 10% 63V
2786	5322 122 31647	1nF 10% 63V
2790	4822 122 33761	22pF 5% 50V
2791	4822 122 33761	22pF 5% 50V
2792	5322 126 11583	10nF 10% 50V 0603
2793	4822 122 33177	10nF 20% 50V
2797	4822 122 33177	10nF 20% 50V
2798	4822 122 33177	10nF 20% 50V
2799	5322 122 32658	22pF 5% 50V
2800	5322 122 32658	22pF 5% 50V
2801	4822 122 33761	22pF 5% 50V
2802	4822 122 32927	220nF 20% 50V
2803	4822 122 32927	220nF 20% 50V
2804	4822 122 32927	220nF 20% 50V
2805	4822 122 32927	220nF 20% 50V
2806	4822 122 32927	220nF 20% 50V
2807	4822 122 32927	220nF 20% 50V
2808	4822 124 12095	100µF 20% 16V
2809	5322 126 10511	1nF 5% 50V
2810	4822 122 33127	2.2nF 10% 63V
2811	5322 126 10511	1nF 5% 50V
2813	5322 126 11583	10nF 10% 50V 0603
2814	5322 126 11583	10nF 10% 50V 0603
2815	5322 126 11583	10nF 10% 50V 0603
2816	4822 124 12095	100µF 20% 16V
2817	5322 126 11583	10nF 10% 50V 0603
2818	4822 124 12095	100µF 20% 16V
2819	4822 124 12095	100µF 20% 16V
2820	5322 126 11578	1nF 10% 50V 0603
2821	4822 122 33177	10nF 20% 50V
2822	5322 126 11578	1nF 10% 50V 0603
2824	4822 124 12095	100µF 20% 16V
2825	4822 122 33177	10nF 20% 50V
2826	4822 122 33761	22pF 5% 50V
2827	5322 126 11578	1nF 10% 50V 0603
2828	4822 122 33177	10nF 20% 50V
2829	5322 126 11578	1nF 10% 50V 0603
2830	4822 122 33177	10nF 20% 50V
2831	4822 124 12095	100µF 20% 16V
2832	4822 126 14494	22nF 10% 25V 0603
2833	4822 126 14494	22nF 10% 25V 0603
2836	4822 126 13692	47pF 1% 63V
2837	5322 126 11583	10nF 10% 50V 0603
2838	4822 122 33761	22pF 5% 50V
2839	5322 126 11583	10nF 10% 50V 0603
2840	5322 126 11583	10nF 10% 50V 0603
2841	4822 126 13482	470nF 80/20% 16V
2844	4822 126 14043	1µF 20% 16V
2845	4822 126 14043	1µF 20% 16V
2846	5322 124 41979	10µF 10% 16V
2847	5322 124 41979	10µF 10% 16V
2848	5322 124 41979	10µF 10% 16V
2849	5322 124 41979	10µF 10% 16V
2887	4822 122 32927	220nF 20% 50V
2888	4822 122 32927	220nF 20% 50V
2890	4822 126 14076	220nF 25V. P8020
2891	4822 126 13838	100nF 50V 20%
2892	4822 126 13482	470nF 80/20% 16V
2895	4822 122 33177	10nF 20% 50V

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3001	2322 704 66201	620Ω 1% 0.063W 0603
3003	4822 117 13521	470Ω 5% RESN 0.63W
3004	4822 117 13521	470Ω 5% RESN 0.63W
3005	4822 117 13521	470Ω 5% RESN 0.63W
3006	4822 051 30103	10k 5% 0.062W
3007	4822 051 30103	10k 5% 0.062W
3009	4822 117 13521	470Ω 5% RESN 0.63W
3010	4822 051 30103	10k 5% 0.062W
3011	4822 051 30472	4k7 5% 0.062W
3013	4822 051 30102	1k 5% 0.062W
3014	4822 117 12925	47k 1% 0.063W 0603
3015	4822 117 12925	47k 1% 0.063W 0603
3016	4822 051 30102	1k 5% 0.062W
3017	4822 051 30102	1k 5% 0.062W
3018	4822 051 30221	220Ω 5% 0.062W
3019	4822 051 30681	680Ω 5% 0.062W
3020	4822 051 30221	220Ω 5% 0.062W
3021	4822 051 30221	220Ω 5% 0.062W
3022	4822 051 10102	1k 2% 0.25W
3023	4822 117 13521	470Ω 5% RESN 0.63W
3024	4822 051 30471	470Ω 5% 0.062W
3027	4822 117 13521	470Ω 5% RESN 0.63W
3028	4822 117 13521	470Ω 5% RESN 0.63W
3029	4822 051 30471	470Ω 5% 0.062W
3030	4822 117 13522	100Ω 5% RESN 0.63W
3031	4822 117 13577	330Ω 1% 1.25W 0805
3032	4822 051 30471	470Ω 5% 0.062W
3033	4822 117 13523	220Ω 5% RESN 0.63W
3034	4822 051 30103	10k 5% 0.062W
3035	4822 051 30103	10k 5% 0.062W
3036	4822 117 13524	2.2k 5% RESN 0.63W
3039	4822 051 30333	33k 5% 0.062W
3041	4822 117 10833	10k 1% 0.1W
3042	4822 051 20474	470k 5% 0.1W
3043	4822 051 30472	4k7 5% 0.062W
3047	4822 117 13525	24k 1% 0.62W 0603
3048	4822 117 13522	100Ω 5% RESN 0.63W
3059	4822 051 30681	680Ω 5% 0.062W
3062	4822 117 12925	47k 1% 0.063W 0603
3063	4822 051 30472	4k7 5% 0.062W
3066	4822 117 10833	10k 1% 0.1W
3067	4822 051 30472	4k7 5% 0.062W
3068	4822 051 30103	10k 5% 0.062W
3069	4822 051 30121	120Ω 5% 0.063W 0603
3070	4822 051 30103	10k 5% 0.062W
3071	4822 051 30472	4k7 5% 0.062W
3072	4822 117 10834	47k 1% 0.1W
3073	4822 051 20472	4k7 5% 0.1W
3075	4822 051 30472	4k7 5% 0.062W
3076	4822 051 30472	4k7 5% 0.062W
3080	4822 117 13522	100Ω 5% RESN 0.63W
3081	4822 051 30101	100Ω 5% 0.062W
3102	4822 117 10833	10k 1% 0.1W
3103	4822 051 20101	100Ω 5% 0.1W
3104	4822 051 20101	100Ω 5% 0.1W
3106	4822 051 20479	47Ω 5% 0.1W
3110	4822 117 11449	2k2 1% 0.1W
3111	4822 117 11449	2k2 1% 0.1W
3112	4822 051 20472	4k7 5% 0.1W
3114	4822 051 20472	4k7 5% 0.1W
3118	4822 051 20391	390Ω 5% 0.1W
3119	4822 051 20479	47Ω 5% 0.1W
3124	4822 051 30101	100Ω 5% 0.062W
3133	4822 117 12955	2k7 1% 0.1W 0805

3135	4822 051 20472	4k7 5% 0.1W
3136	4822 117 11503	220Ω 1% 0.1W
3137	4822 051 10102	1k 2% 0.25W
3138	4822 117 11448	180Ω 1% 0.1W
3139	4822 117 11139	1k5 1% 0.1W
3140	4822 116 83933	15k 1% 0.1W
3141	4822 051 30333	33k 5% 0.062W
3142	4822 051 30102	1k 5% 0.062W
3143	4822 051 30102	1k 5% 0.062W
3145	4822 051 30101	100Ω 5% 0.062W
3146	4822 051 20223	22k 5% 0.1W
3147	4822 052 10109	10Ω 5% 0.33W
3150	4822 052 10189	18Ω 5% 0.33W
3151	4822 052 10159	15Ω 5% 0.33W
3200	4822 117 10353	150Ω 1% 0.1W
3201	4822 117 10353	150Ω 1% 0.1W
3202	4822 117 10353	150Ω 1% 0.1W
3203	4822 117 10353	150Ω 1% 0.1W
3204	4822 052 10688	6Ω8 5% 0.33W
3205	4822 051 20471	470Ω 5% 0.1W
3206	4822 117 12521	68Ω 1% 0.1W
3207	4822 051 20561	560Ω 5% 0.1W
3208	4822 051 20399	39Ω 5% 0.1W
3209	4822 117 11927	75Ω 1% 0.1W
3210	4822 117 11927	75Ω 1% 0.1W
3211	4822 117 11927	75Ω 1% 0.1W
3212	4822 051 20399	39Ω 5% 0.1W
3213	4822 117 11927	75Ω 1% 0.1W
3215	4822 117 11927	75Ω 1% 0.1W
3216	4822 051 20822	8k2 5% 0.1W
3218	4822 051 20392	3k9 5% 0.1W
3219	4822 051 10102	1k 2% 0.25W
3220	4822 051 10102	1k 2% 0.25W
3221	4822 117 10353	150Ω 1% 0.1W
3222	4822 117 10353	150Ω 1% 0.1W
3223	4822 117 10353	150Ω 1% 0.1W
3224	4822 117 10353	150Ω 1% 0.1W
3225	4822 052 10688	6Ω8 5% 0.33W
3228	4822 051 30101	100Ω 5% 0.062W
3229	4822 051 30103	10k 5% 0.062W
3230	4822 051 20561	560Ω 5% 0.1W
3232	4822 117 12521	68Ω 1% 0.1W
3233	4822 117 10353	150Ω 1% 0.1W
3235	4822 117 11927	75Ω 1% 0.1W
3236	4822 117 11927	75Ω 1% 0.1W
3240	4822 117 11927	75Ω 1% 0.1W
3241	4822 117 10353	150Ω 1% 0.1W
3242	4822 051 20822	8k2 5% 0.1W
3243	4822 117 10353	150Ω 1% 0.1W
3244	4822 051 10102	1k 2% 0.25W
3245	4822 051 20392	3k9 5% 0.1W
3246	4822 051 10102	1k 2% 0.25W
3248	4822 117 13577	330Ω 1% 1.25W 0805
3249	4822 117 12955	2k7 1% 0.1W 0805
3250	4822 051 20101	100Ω 5% 0.1W
3252	4822 051 20339	33Ω 5% 0.1W
3253	4822 051 20391	390Ω 5% 0.1W
3254	4822 051 10102	1k 2% 0.25W
3255	4822 051 10102	1k 2% 0.25W
3256	4822 117 11927	75Ω 1% 0.1W
3257	4822 117 10353	150Ω 1% 0.1W
3258	4822 117 10353	150Ω 1% 0.1W
3259	4822 051 30273	27k 5% 0.062W
3262	4822 117 12925	47k 1% 0.063W 0603
3263	4822 051 30221	220Ω 5% 0.062W
3264	4822 051 20822	8k2 5% 0.1W
3265	4822 117 12955	2k7 1% 0.1W 0805
3266	4822 117 10833	10k 1% 0.1W
3272	4822 117 10353	150Ω 1% 0.1W
3280	4822 117 10353	150Ω 1% 0.1W
3300	4822 052 10688	6Ω8 5% 0.33W
3302	4822 051 30101	100Ω 5% 0.062W
3303	4822 051 30101	100Ω 5% 0.062W
3304	4822 051 30101	100Ω 5% 0.062W
3307	4822 051 30102	1k 5% 0.062W
3308	4822 051 30102	1k 5% 0.062W
3309	4822 117 13632	100k 5% 0.062W
3310	4822 051 20332	3k3 5% 0.1W
3311	4822 051 30102	1k 5% 0.062W
3312	4822 117 13632	100k 1% 0603 0.62W
3315	4822 051 20182	1k8 5% 0.1W
3316	4822 051 10102	1k 2% 0.25W
3317	4822 051 30102	1k 5% 0.062W
3318	4822 051 30102	1k 5% 0.062W
3320	4822 051 30102	1k 5% 0.062W
3321	4822 051 30102	1k 5% 0.062W
3322	4822 051 30102	1k 5% 0.062W
3323	4822 051 20393	39k 5% 0.1W
3325	4822 051 30102	1k 5% 0.062W
3326	4822 051 30221	220Ω 5% 0.062W
3330	4822 051 30684	680k 5% 0.062W
3331	4822 117 12925	47k 1% 0.063W 0603
3332	4822 051 30183	18k 5% 0.062W
3340	4822 051 30123	12k 5% 0.062W
3341	4822 051 10102	1k 2% 0.25W
3342	4822 051 30103	10k 5% 0.062W
3343	4822 117 10837	100k 1% 0.1W
3344	4822 051 30103	10k 5% 0.062W
3350	4822 051 30474	470k 5% 0.062W
3351	4822 117 12891	220k 1%
3352	4822 051 30332	3k3 5% 0.062W
3353	4822 117 12903	1k8 1% 0.063W 0603
3369	4822 051 30103	10k 5% 0.062W
3370	4822 051 30103	10k 5% 0.062W
3400	4822 117 11454	820Ω 1% 0.1W
3401	4822 117 11454	820Ω 1% 0.1W
3402	4822 117 11454	820Ω 1% 0.1W
3404	4822 051 20479	47Ω 5% 0.1W
3405	4822 051 20479	47Ω 5% 0.1W
3406	4822 051 20479	47Ω 5% 0.1W
3407	4822 117 10361	680Ω 1% 0.1W
3408	4822 117 10361	680Ω 1% 0.1W
3409	4822 117 10361	680Ω 1% 0.1W
3420	3198 021 90030	0Ω jumper 0603
3423	4822 117 11449	2k2 1% 0.1W
3425	4822 051 30155	1M5 5% 0.062W
3428	4822 051 30222	2k2 5% 0.062W
3429	4822 117 12968	820Ω 5% 0.62W
3430	4822 051 30181	180Ω 5% 0.062W
3431	4822 051 30682	6k8 5% 0.062W
3432	4822 051 30101	100Ω 5% 0.062W
3433	4822 051 30101	100Ω 5% 0.062W
3434	4822 052 10478	4Ω7 5% 0.33W
3436	4822 051 20008	0Ω jumper 0805
3438	4822 117 10834	47k 1% 0.1W
3439	4822 117 10833	10k 1% 0.1W
3440	4822 051 20333	33k 5% 0.1W
3441	4822 051 20223	22k 5% 0.1W
3442	4822 051 20333	33k 5% 0.1W
3443	4822 051 20683	68k 5% 0.1W
3521	4822 117 13632	100k 1% 0603 0.62W
3529	4822 117 13522	100Ω 5% RESN 0.63W
3530	4822 051 30101	100Ω 5% 0.062W
3531	4822 051 30101	100Ω 5% 0.062W
3532	4822 116 83933	15k 1% 0.1W
3538	4822 052 10478	4Ω7 5% 0.33W
3545	4822 051 30471	470Ω 5% 0.062W
3546	4822 051 30471	470Ω 5% 0.062W
3551	4822 051 30271	270Ω 5% 0.062W
3553	4822 117 10353	150Ω 1% 0.1W
3554	4822 051 10102	1k 2% 0.25W
3556	4822 117 10833	10k 1% 0.1W
3557	4822 051 30479	47Ω 5% 0.062W
3565	4822 051 30101	100Ω 5% 0.062W
3566	4822 051 30101	100Ω 5% 0.062W
3567	4822 051 20101	100Ω 5% 0.1W
3568	4822 051 20471	470Ω 5% 0.1W
3569	4822 051 30479	47Ω 5% 0.062W
3570	4822 117 13522	100Ω 5% RESN 0.63W
3573	4822 051 20109	10Ω 5% 0.1W
3574	4822 051 20008	0Ω jumper 0805
3590	4822 117 11454	820Ω 1% 0.1W
3602	4822 117 12139	22Ω 5% 0.062W
3603	4822 051 30101	100Ω 5% 0.062W
3605	4822 051 30101	100Ω 5% 0.062W
3606	4822 051 30109	10Ω 5% 0.062W
3607	4822 051 30392	3k9 5% 0.063W 0603
3608	4822 051 30272	2k7 5% 0.062W
3609	4822 117 12917	1Ω 5% 0.062W 0603
3610	4822 051 30391	390Ω 5% 0.062W
3611	4822 051 30102	1k 5% 0.062W
3612	4822 051 30391	390Ω 5% 0.062W
3613	4822 051 30391	390Ω 5% 0.062W
3614	4822 051 30479	47Ω 5% 0.062W
3615	4822 051 30471	470Ω 5% 0.062W
3616	4822 051 30472	4k7 5% 0.062W
3617	4822 051 30472	4k7 5% 0.062W
3618	4822 051 30221	220Ω 5% 0.062W
3619	4822 051 30472	4k7 5% 0.062W
3620	4822 051 30472	4k7 5% 0.062W
3621	4822 051 30101	100Ω 5% 0.062W
3623	4822 051 30101	100Ω 5% 0.062W
3625	4822 051 30105	1M 5% 0.062W
3626	4822 051 30101	100Ω 5% 0.062W
3628	4822 051 30101	100Ω 5% 0.062W
3629	4822 051 30332	3k3 5% 0.062W
3631	4822 051 20008	0Ω jumper 0805
3632	4822 051 10102	1k 2% 0.25W
3633	4822 051 30101	100Ω 5% 0.062W
3634	4822 051 30332	3k3 5% 0.062W
3635	4822 117 10361	680Ω 1% 0.1W
3636	4822 117 10361	680Ω 1% 0.1W
3637	4822 117 10361	680Ω 1% 0.1W
3639	4822 051 30101	100Ω 5% 0.062W
3640	4822 117 12917	1Ω 5% 0.062W 0603
3641	4822 051 30102	1k 5% 0.062W
3644	4822 051 30102	1k 5% 0.062W
3645	4822 051 30102	1k 5% 0.062W
3646	4822 051 20472	4k7 5% 0.1W
3647	4822 051 30689	68Ω 5% 0.063W 0603
3648	4822 051 30689	68Ω 5% 0.063W 0603
3649	4822 051 30689	68Ω 5% 0.063W 0603
3650	4822 051 30121	120Ω 5% 0.062W
3651	4822 051 30121	120Ω 5% 0.062W
3652	4822 051 30121	120Ω 5% 0.062W
3653	4822 051 30689	68Ω 5% 0.063W 0603
3654	4822 051 30689	68Ω 5% 0.063W 0603
3655	4822 051 30101	100Ω 5% 0.062W
3657	4822 051 30101	100Ω 5% 0.062W
3659	4822 051 30101	100Ω 5% 0.062W
3751	4822 051 30223	22k 5% 0.062W
3752	4822 051 30223	22k 5% 0.062W
3753	4822 051 30682	6k8 5% 0.062W
3754	4822 051 30682	6k8 5% 0.062W
3755	4822 051 30101	100Ω 5% 0.062W
3756	4822 051 30101	100Ω 5% 0.062W
3758	4822 117 12925	47k 1% 0.063W 0603
3760	4822 117 12925	47k 1% 0.063W 0603
3761	4822 051 30223	22k 5% 0.062W
3762	4822 051 20472	4k7 5% 0.1W
3765	4822 051 30683	68k 5% 0.062W
3766	4822 051 30103	10k 5% 0.062W
3767	4822 051 30683	68k 5% 0.062W
3768	4822 051 30103	10k 5% 0.062W
3769	4822 117 11507	6k8 1% 0.1W
3770	4822 117 11507	6k8 1% 0.1W
3771	4822 116 83933	15k 1% 0.1W
3772	4822 116 83933	15k 1% 0.1W
3773	4822 051 20472	4k7 5% 0.1W
3776	4822 051 20333	33k 5% 0.1W
3777	4822 117 11148	56k 1% 0.1W
3778	4822 051 20333	33k 5% 0.1W
3779	4822 117 11148	56k 1% 0.1W
3780	4822 051 30223	22k 5% 0.062W
3781	4822 051 30561	560Ω 5% 0.062W
3782	4822 051 30101	100Ω 5% 0.062W
3783	4822 051 20101	100Ω 5% 0.1W
3784	4822 051 30682	6k8 5% 0.062W
3785	4822 051 30682	6k8 5% 0.062W
3786	4822 051 30223	22k 5% 0.062W
3787	4822 051 30223	22k 5% 0.062W
3788	4822 051 30682	6k8 5% 0.062W
3789	4822 051 30682	6k8 5% 0.062W
3790	4822 051 30223	22k 5% 0.062W
3791	4822 051 30223	22k 5% 0.062W
3792	4822 051 30682	6k8 5% 0.062W
3793	4822 051 30682	6k8 5% 0.062W
3794	4822 051 30223	22k 5% 0.062W
3795	4822 051 30223	22k 5% 0.062W
3796	4822 051 20121	120Ω 5% 0.1W
3797	4822 051 20121	120Ω 5% 0.1W
3798	4822 117 10834	47k 1% 0.1W
3799	4822 117 12925	47k 1% 0.063W 0603
3811	4822 051 30101	100Ω 5% 0.062W
3812	4822 051 30101	100Ω 5% 0.062W
3813	4822 051 30101	100Ω 5% 0.062W
3814	4822 051 30101	100Ω 5% 0.062W
3817	4822 117 10837	100k 1% 0.1W
3818	4822 051 30101	100Ω 5% 0.062W
3819	4822 051 30101	100Ω 5% 0.062W
3820	4822 051 30101	100Ω 5% 0.062W
3821	4822 051 30103	10k 5% 0.062W
3822	4822 117 12925	47k 5% 0.062W
3823	4822 051 20472	4k7 5% 0.1W
3824	4822 051 20101	100Ω 5% 0.1W
3825	4822 051 30563	56k 5% 0.062W
3826	4822 117 10353	150Ω 1% 0.1W
3827	4822 051 30101	100Ω 5% 0.062W
3828	4822 117 12925	47k 1% 0.063W 0603
3829	4822 117 12925	47k 1% 0.063W 0603
3830	4822 051 20121	120Ω 5% 0.1W
3831	4822 051 20121	120Ω 5% 0.1W
3832	4822 051 10102	1k 2% 0.25W
3833	4822 051 30103	10k 5% 0.062W
3837	4822 051 30563	56k 5% 0.062W
3838	4822 051 30101	100Ω 5% 0.062W
3839	4822 051 30101	100Ω 5% 0.062W
3840	4822 051 30103	10k 5% 0.062W
3841	4822 051 30101	100Ω 5% 0.062W
3842	4822 117 12925	47k 1% 0.063W 0603
3844	4822 117 12925	47k 1% 0.063W 0603
3845	4822 117 12925	47k 1% 0.063W 0603
3846	4822 117 12925	47k 1% 0.063W 0603

3847	4822 117 12925	47k 1% 0.063W 0603
3848	4822 051 30101	100Ω 5% 0.062W
3849	4822 051 30101	100Ω 5% 0.062W
3852	4822 051 30223	22k 5% 0.062W
3853	4822 051 30223	22k 5% 0.062W
3890	4822 051 30331	330Ω 5% 0.062W
3891	4822 051 30272	2k7 5% 0.062W
3892	4822 117 13577	330Ω 1% 0.1W 0805
3893	4822 117 12955	2k7 1% 0.1W 0805
3894	4822 117 10834	47k 1% 0.1W
3895	4822 051 30103	10k 5% 0.062W
3897	4822 051 30472	4k7 5% 0.062W
3898	4822 051 30101	100Ω 5% 0.062W
4410	4822 051 10102	1k 5% 0.1W 0805
4xxx	4822 051 10008	0Ω jumper 1206
4xxx	4822 051 20008	0Ω jumper 0805

5001	4822 157 11828	22µH 20% 0805
5002	4822 157 11775	6.8µH 5%
5101	4822 157 11775	6.8µH 5%
5102	4822 157 71303	0.39µH 10%
5103	4822 157 11776	Coil var. 40.4MHz
5106	4822 157 10977	4.7µH 10%
5108	4822 157 11534	Coil var. 78MHz
5301	4822 157 11876	6.8µH 10% 0805
5302	4822 157 11876	6.8µH 10% 0805
5305	4822 157 11778	5.6µH 10% 0805
5306	4822 157 11778	5.6µH 10% 0805
5307	4822 157 11778	5.6µH 10% 0805
5501	4822 157 11775	6.8µH 5%
5502	4822 157 11775	6.8µH 5%
5540	4822 157 71304	1µH 10%
5553	4822 157 11855	68µH 10% 0805
5559	4822 157 11775	6.8µH 5%
5560	4822 157 11775	6.8µH 5%
5562	4822 157 11775	6.8µH 5%
5601	4822 157 11775	6.8µH 5%
5602	4822 157 11779	Bead 100MHz 30Ω
5603	4822 157 70503	4.7µH
5604	4822 157 11775	6.8µH 5%
5605	4822 157 11779	Bead 100MHz 30Ω
5606	4822 157 11775	6.8µH 5%
5608	4822 157 11778	5.6µH 10% 0805
5609	4822 157 11778	5.6µH 10% 0805
5610	4822 157 11778	5.6µH 10% 0805
5611	4822 157 11781	Bead 100MHz 600Ω
5613	4822 157 11781	Bead 100MHz 600Ω
5615	4822 157 11778	5.6µH 10% 0805
5616	4822 157 11778	5.6µH 10% 0805
5617	4822 157 11778	5.6µH 10% 0805
5620	4822 157 11775	6.8µH 5%
5621	4822 157 11782	100µH 10% 0805
5751	4822 157 11775	6.8µH 5%
5752	4822 157 11775	6.8µH 5%
5753	4822 157 11775	6.8µH 5%
5754	4822 157 11876	6.8µH 10% 0805
5755	4822 157 11876	6.8µH 10% 0805
5756	4822 157 11775	6.8µH 5%

6001	4822 130 11422	PLVA2650A
6002	4822 130 11422	PLVA2650A
6003	4822 130 11422	PLVA2650A
6004	4822 130 11422	PLVA2650A
6006	4822 130 11422	PLVA2650A
6008	4822 130 11422	PLVA2650A
6009	4822 130 11422	PLVA2650A
6012	4822 130 11422	PLVA2650A
6013	4822 130 11422	PLVA2650A
6017	4822 130 11422	PLVA2650A
6019	4822 130 11422	PLVA2650A
6021	4822 130 11422	PLVA2650A
6023	4822 130 11422	PLVA2650A
6025	4822 130 11423	PLVA2656A
6026	4822 130 11423	PLVA2656A
6037	4822 130 11366	BZX284-C3V9
6101	4822 130 11027	BZX284-C33
6103	4822 130 10414	BA792
6104	4822 130 10414	BA792
6106	4822 130 83757	BAS216
6107	4822 130 83757	BAS216
6200	4822 130 10794	BZX284-C10
6201	4822 130 10852	BZX284-C6V8
6202	4822 130 10794	BZX284-C10
6203	4822 130 10794	BZX284-C10
6204	4822 130 10852	BZX284-C6V8
6205	4822 130 10794	BZX284-C10
6206	4822 130 10794	BZX284-C10
6207	4822 130 10852	BZX284-C6V8
6208	4822 130 10794	BZX284-C10
6209	4822 130 10794	BZX284-C10
6210	4822 130 10852	BZX284-C6V8
6211	4822 130 10852	BZX284-C6V8
6212	4822 130 10852	BZX284-C6V8
6213	4822 130 10852	BZX284-C6V8
6214	4822 130 10794	BZX284-C10
6215	4822 130 10794	BZX284-C10
6216	4822 130 10794	BZX284-C10
6217	4822 130 10794	BZX284-C10
6218	4822 130 11031	BZX284-C12
6219	4822 130 10852	BZX284-C6V8
6220	4822 130 10794	BZX284-C10
6221	4822 130 10794	BZX284-C10
6222	4822 130 10852	BZX284-C6V8
6223	4822 130 10794	BZX284-C10
6224	4822 130 10794	BZX284-C10
6225	4822 130 10852	BZX284-C6V8
6226	4822 130 10852	BZX284-C6V8
6227	4822 130 10852	BZX284-C6V8
6228	4822 130 10852	BZX284-C6V8
6229	4822 130 10794	BZX284-C10
6230	4822 130 10794	BZX284-C10
6231	4822 130 10794	BZX284-C10
6232	4822 130 10794	BZX284-C10
6233	4822 130 10852	BZX284-C6V8
6234	4822 130 10794	BZX284-C10
6235	4822 130 10794	BZX284-C10
6236	4822 130 10794	BZX284-C10
6237	4822 130 10794	BZX284-C10
6238	4822 130 10654	BAT254
6250	4822 130 10654	BAT254
6260	4822 130 10794	BZX284-C10
6261	4822 130 10794	BZX284-C10
6340	4822 130 83757	BAS216
6341	4822 130 11594	BZX284-C47
6344	4822 130 83757	BAS216
6350	4822 130 11414	BZX284-C27
6422	4822 051 20008	0Ω jumper 0805
6429	4822 130 10648	BZX284-C5V6
6430	4822 130 83757	BAS216
6431	4822 130 83757	BAS216
6432	4822 130 83757	BAS216
6751	4822 130 10794	BZX284-C10
6752	4822 130 10794	BZX284-C10
6753	4822 130 10794	BZX284-C10
6754	4822 130 10794	BZX284-C10
6755	4822 130 10794	BZX284-C10
6756	4822 130 10794	BZX284-C10
6757	4822 130 83757	BAS216

7001	9322 136 53668	MSM51V18165D-60JS
7002	3104 317 ?????	SOFTW ASSY 3104 317 ?????
7003	9352 629 88557	SAA5801/011 V30
7004	4822 130 60511	BC847B
7005	4822 130 60373	BC856B
7006	4822 130 60373	BC856B
7007	4822 130 60511	BC847B
7008	4822 209 16977	M24C32-WBN6
7009	4822 209 16978	LF33CV
7010	4822 209 73852	PMBT2369
7011	4822 130 11155	PDTC114ET
7012	4822 130 60373	BC856B
7013	4822 209 17308	M29W400T-100M1
7014	4822 130 60511	BC847B
7015	4822 130 60373	BC856B
7016	4822 130 60511	BC847B
7103	4822 130 60511	BC847B
7104	4822 130 60511	BC847B
7107	4822 130 60373	BC856B
7111	4822 130 60511	BC847B
7200	4822 130 40959	BC547B
7201	4822 130 40959	BC547B
7203	4822 130 44568	BC557B
7204	4822 130 60511	BC847B
7205	4822 130 60511	BC847B
7216	4822 130 60511	BC847B
7300	4822 209 16979	TDA9330H/N1
7341	4822 130 60373	BC856B
7351	4822 130 60373	BC856B
7402	4822 209 17311	TDA9178T/N1
7418	4822 130 60373	BC856B
7419	4822 130 60373	BC856B
7420	4822 130 60373	BC856B
7438	4822 130 10255	MMUN2213
7501	4822 209 17487	TDA9320AH/N1
7502	4822 130 60511	BC847B
7555	4822 130 60373	BC856B
7560	4822 209 12998	SAA4961/V3/S1
7561	4822 130 60511	BC847B
7601	4822 130 60373	BC856B
7602	4822 130 60511	BC847B
7603	4822 130 60373	BC856B
7604	4822 209 73852	PMBT2369
7605	4822 209 73852	PMBT2369
7608	4822 209 90034	SAA4990H/V0
7609	9352 626 35557	SAA4978H/V2
7610	4822 130 60373	BC856B
7611	4822 130 60373	BC856B
7612	4822 130 60373	BC856B
7613	4822 209 15882	MC33269D
7614	4822 209 17307	MSM54V12222A-30JS
7615	4822 209 17307	MSM54V12222A-30JS
7616	3104 317 41921	SOFTWARE FBX R3_13
7750	4822 209 16978	LF33CV
7751	4822 209 16803	MSP3410D-PS-B4
7752	5322 209 11102	HEF4052BT
7753	5322 209 11102	HEF4052BT
7756	4822 209 30095	LM833D
7757	4822 209 31378	NJM4556MB
7758	4822 209 30095	LM833D
7770	4822 209 17421	SAA7712H/N203
7772	4822 209 30095	LM833D
7774	4822 130 60511	BC847B

Optical Assembly Replacement Parts List

(See fig 9.1)

A	3135 010 02590	Shoulder Screw 1/4-20 (CRT To Coupler) (x12)
B	3135 011 00611	MM Spring,Tube MT, CRT Mounting (x12)
D	3135 011 02370	CRT Bracket-Spring Assembly (x3)
E	9322 107 66682	CRT Red P16LFM00RFA
E	9322 107 67682	CRT Green P16LFMOOHLA
E	9322 107 68682	CRT Blue P16LFM00BMB
H	3135 013 02321	Seal, CRT (x3)
I	4835 310 67004	Coolant (Enough for 1 CRT)
I	4835 310 57233	Coolant (Enough for 3 CRTs)
K	3135 014 02640	Fill Plug (x3)
L	3135 013 01230	Seal, O-Ring (x3)
M	3135 014 02680	Cap, Coupler (Diaphragm Cover) (x3)
O	3135 013 01060	Diaphragm,Coupler (x3)
P	3135 011 01943	Coupler, Red & Blue (Used in 0002) (x2)
P	3135 011 03633	Coupler, Red & Blue (Used in 0001) (x2)
P	3135 011 02322	Coupler, Green"
R	3135 013 02632	Lens Seal (Lens to Coupler) (x3)
S	3135 013 01070	Lens, C-Element (For Green)
S	3135 013 01080	Lens, C-Element (Red & Blue) (x2)
W	3135 013 00820	Lens, Delta 78 (Green & Red) (x2)
W	3135 013 00900	Lens, Delta 79 (Used in 0002) (x2)
W	3135 013 01050	Lens Integral (For Blue) (Used in 0001) (x2)
X	3135 010 02970	Screw 8-32.5 Torx (Lens to Coupler) (x12)
	2422 549 44234	Deflection Yoke DAV4194M (x3)
	3135 014 02605	Drip Barrier
	3135 010 00730	Focus Lead (H/V Transformer to Focus/G2 Block)
	2322 460 90519	Focus/Screen Control
	3135 010 00760	HV Anode Lead (x3)
	3135 013 00121	Light Shield (Used in 0002) (x2)